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RAIL-ROAD NEWS.

Fatal Railroad Accident.

Le Roy Barney, a respectable citizen of Buffalo, was killed on the 1st inst. at the Falls. The evening train had started for Buffalo, and he endeavored to catch it by running; he reached the front of the last car and attempted to catch hold of the rails on each side of the steps, but caught only that nearest the carriage with his right hand, when he was swung violently round, and the next second was hurled under the wheels, which passed over his head, crushing out his brains in the most frightful manner.

Railroad Disaster.

An accident occurred on the Springfield Railroad, last week, by which three passengers were killed and several severely injured. The calamity was caused by the train running off the track at a place called Windsor Locks, between Hartford and Springfield, when two of the cars became detached, and one of them was precipitated iuto the adjoining lock of the canal. No blame can be attached to the engineer, as the accident arose from no negligence on his part, but it is supposed from a defective rail, which threw the train off the track.

Northern Railroad.

The work on the section of the road near Albany is expected to be completed by the 1st of next month. The buildings on the line of this road within the bounds of the city are being torn down, and the ground prepared for the rails. It is confidently expected that the rails will be laid to Cohoes, and the road ready for use by the 1st ot December next.

A Long Tunnel.

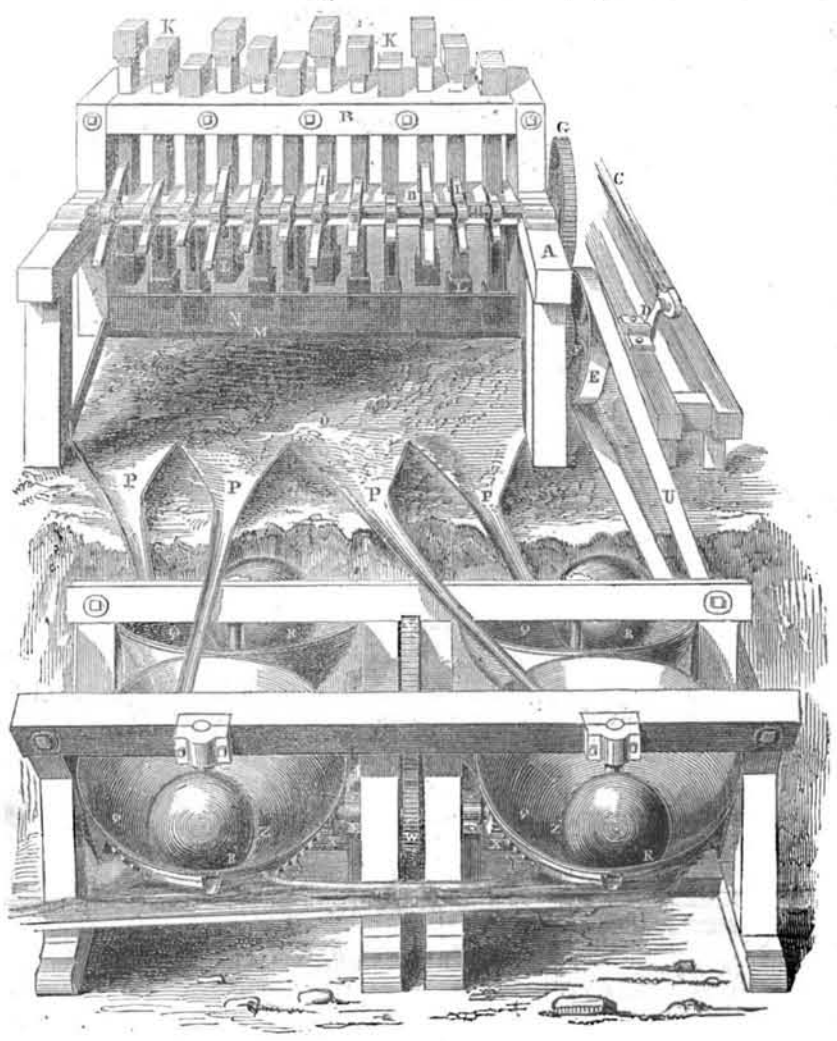
One of the longest tunnels in the world is now approaching completion. It is situated in Hungary and leads from the shore of the river Gran, not far from Zarnowitz to the mines in the Schemnitzer Hill. It is about ten English miles long, and it is intended to answer the double purpose of a channel to drain off the water accumulating in the works, and of a railway to transport the ore from the mines to the river.

Air Line Railroad.

The air-line project between New York and Boston is again agitated. It is now proposed to make use of the newly constructed Charles River Railroad, which will be met at a point called Scott's Hill, in the town of Bellingham, by a direct line of road passing through Woonsocket, R. I., thence across the State of Rhode Island, and thence through Middletown and the State of Connecticut to New York City.

The Pittsburgh and Steubenville Railroad is rapidly advancing to completion. This is the great connecting link between the Pennsylvania Central Railroad, and St. Louis road. The completion of these railroads opens a direct communication to the entire west. It is expected that the whole road from Philadelphia to St. Louis, will be in successful operation by January 1851.

GOLD QUARTZ PULVERIZER AND AMALGAMATOR.



The above is a perspective view of H. Berdan's machinery for grinding and reducing gold quartz to an impalpable powder, and amalgamating the said ground quartz with quicksilver. The same letters refer to like parts. The machinery here represented exhibits a set of stampers placed on an elevation above the pulverizing and amalgamating basins. The stampers are of the usual form, and are operated in the common manner as here exhibited. A strong frame is erected.

A is a cross sill or bearing brace, one on each side, having journal boxes for the lifter shaft, H, which receives motion from the main shaft, D, which is driven by animal, water, or steam power, giving motion to the crank through the connecting rod, C. The cog wheel, F, gears into the one, G, on shaft, H, and rotates the lifter shaft. On this shaft are a series of horns, or lifters, and by some called "wipers" I, for lifting the stampers. There are slots in the vertical shafts or arms of the stampers, the lifters take into said slots as they revolve, and lift each stamper to a height corresponding with the length of the lifter (15 inches) when it—the stamper—drops down, 45 times in a minute, on the quartz in the trough, with a blow like that of a hammer weighing 600 lbs.; M is the cast-metal bottom of the quartz trough; N is a wire screen through which the pounded quartz —reduced to about the size of small shot—passes from the stamper trough to the receptacle, O, into the several spouts, P P P P, and thence into the pulverizing and amalgamating basins. On the other side of the stampers is an inclined iron plate to guide the ore under the stampers. The upright shafts or arms of the stampers are guided through openings in the guide boards, B B, to drop perpendicularly on the quartz; L L are the hammers of the stampers; they are made of the best chilled iron, and are so formed as to do double duty the top weights, K K, being hammers also and capable of supplying the places of L L. The pulverizing and amalgamating basins are set in an inclined position. Four of these basins, Q Q Q Q, are shown set in one frame, receiving the pounded quartz—it is pounded with a small stream of water flowing in—from the spouts, P P. Each basin is a large circular iron vessel, like a potash kettle, and set inclined at an angle of about 45°. The basins are made to revolve, and this gives each ball a rotary motion on its own axis contrary to the motion of the basin. There is one ball, R, for each basin. Each ball keeps rolling in the lower inclined part, Z, of its basin, into which the pounded quartz is gathered, and there exposed to the rolling pulverizing weight and motion of the ball, which rolls on the quartz while the basin is continually presenting a new surface, to change the position of the quartz, as it (the basin) rotates on its axis. The quicksilver is placed in the lower part of the basin, and the weight of the ball and its motion, keeps it in continual contact below the surface with the pulverized quartz. This prevents any of the oxide of iron, which may be in the quartz, from forming a coating to prevent the contact of quicksilver with the gold—the oxide is rubbed off and passes out with the surface water. It is therefore superior to a mere surface amalgamator. Each ball weighs about 3,000 lbs., it can be cast solid, or for convenience, cast hollow, and then filled with black sand at the mines. The ball motion is the best to reduce the quartz to an impalpable powder, in which state it must be for proper washing, or for amalgamation with the mercury. The lighter matters pass off at the lower lip of each inclined basin through a spout. The basins are therefore pulverizing, washing, and amalgamating machines. These basins are each made with conical funnels reaching down to the lower bearing of each. These funnels are not shown, but it will explain their form to say, they are shaped in elevation, like the common kind which gives them a firm bearing below, to support each basin. Said funnels are made hollow so as to admit of being made into furnaces for heating the basins to promote the quick amalgamation of the metals, which is said to be done by a certain degree of heat. Mr. Berdan also proposes to let the exhaust steam (when an engine is employed for driving), into the water of the stampers, so as to heat it also. The same water that is employed for stamping the quartz passes into the basins; this is to economize the water in places where it is scarce. The waste water and impurities pass from the basins by the conduit, T. Motion is given to the basins—they having vertical axes—by having cog teeth, Y Y, cast on the outside at the bottom of each. A cog pinion, X X, on a cross shaft, takes into the teeth on its basin, and gives it a rotating motion on its axis. The shaft of these pinions, X, has a central pinion, W, that receives motion from the large middle wheel, V, on a central shaft, and which thus moves all the basins. Any number of basins may thus be set in rows, and thus moved by a band, U, from the pulley, E, of the main shaft, D. driving a pulley on the central shaft of the large cog wheel, V. The arrangement, motions, and operations of the several parts are now explained.

So far as has been experimented with, it takes about one horse-power to work one ton of ore in twelve hours. It takes about twenty horse-power to work twelve stampers and four of these large basins. The price, all complete, is $200 per horse-power; one, two, three, four, or more, basins can be employed. To prevent the attendants taking out any of the amalgamated gold; the basins can be covered and locked, to be opened by the superintendent only at certain specified times. We have seen some very flattering notices of this machine, in cotemporary journals. A large machine is fitted up at the Novelty Works this city, where a number are being manufactured for California; and one for the New Jersey Zinc Co., to be employed for reducing the zinc ore.

Measures have been taken to secure patents in foreign countries for this machine. More information may be obtained by calling, or by letter addressed to Mr. Berdan, at the Astor House, New York.

Composition for Treatment of Wool.

This is a new composition for preparing wool for manufacturing purposes, invented by Wm. S. Hubbell and Amos Barrett, of Kingsville, Ashtabula Co., Ohio, who have taken measures to secure a patent therefor. In the common way of treating wool for manufacturing purposes, it is washed before it is fit for combing, and after having dried is treated with some unctuous agent, such as oil of various sorts, to render it fit for manufacture. By this new process the previous washing is not required, as the composition itself acts upon the greasy glutinous matter in the wool, and renders it afterwards much more suitable for manufacturing purposes than wool that has been treated in the ordinary way.

Buckle on your Preserver Right.

An inventor of a patent life preserver tested its efficacy a few days since, in the presence of a large crowd at Cincinnati. With it girdled to his body, he jumped into the Ohio, not far from Walnut street. Some of the gearing became displaced, and instead of the inventor's head remaining at the top of the water, his position was reversed—the head down and feet up. It was with difficulty the assembled crowd saved the gentleman from drowning.

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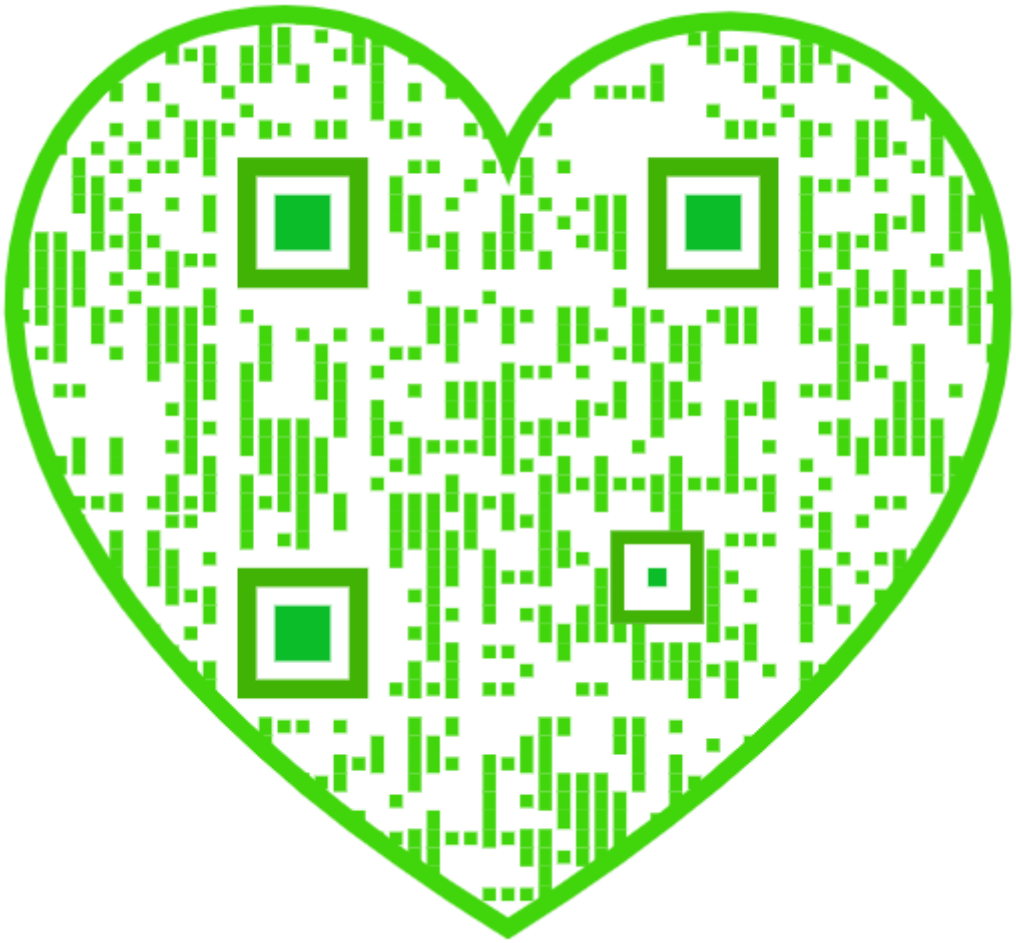

MISCELLANEOUS.

Tanning, A New Book.

The "Art of Tanning, Currying, and Leather Dressing," by Campbell Morfitt, an able chemist, and published by Henry C. Baird, of Philadelphia, is a new book on a subject of great importance to tens of thousands in our country, for the leather interests of the United States are very extensive. There being no less than 6,293 tanneries in our country, employing 20,909 persons, and in which is invested no less than $18,900,557. With the exception of those excellent articles published in Vol. 5, Scientific American by one of the oldest, ablest, and best educated tanners in the United States, we have seen nothing published on tanning in our country which was of any consequence until now. This work is a translation from a celebrated French work, with such emendations and additions by Mr. Morfit as to render it a new book with all that is good belonging to the old one. It is adorned with a plate of Zadock Pratt, and a short biography of the ex-senator tanner.—There are older and perhaps more experienced tanners than he in our country, but none, we suppose, so fortunately wealthy. Some very excellent chapters are presented on the nature of tanning, the different substances employed; the qualities of different barks and a very excellent essay on the oaks of our country, of which there is a great variety. All the processes are explained and illustrated with 200 engravings, and the specifications of various patents for improvements are presented. No less than ten several patent accelerating processes (foreign and home inventions) are given, among which is that of Hibbard, published in Vol. 6, Scientific American. A great many other plans are also given, but that of Prof. Eaton, which has been highly praised, is not mentioned. The patent for it was granted at such a recent date, that information of the same could not have been obtained in time for publication.

In looking over this book, and reading the different plans for improving leather, and for reducing the time occupied in tanning a skin or hide, we are more and more convinced of the important fact that the tanning art has been greatly improved by modern discoveries and application—a contrary opinion to that held by the universal mass of the people. We know it is very difficult to introduce new plans of tanning, for tanners are like others wedded to old things; thus the rolling of leather—an operation now generally practised—was opposed with much bitterness by some of our most experienced tanners, one of whom said "he never would roll a hide while he lived," an assertion which he wisely lived either to forget or repudiate.

The whole science of tanning depends on two principles, one the removal of the hair from the skin, with the least injury to the gelatinous matter of which it is composed, and the other is the rendering of the skin insoluble in water, and to resist the action of the atmosphere, and yet be flexible. The hair can be removed by lime, sweating, and other means, but the employment of a substance or substances that will combine with the gelatine of the skin to form a new substance, insoluble in water and incapable of being injuriously acted upon by the atmosphere, offers a wide field for the historian of the tanning art, and presents a subject for the study of every tanner at least in our country. The art of tanning was known, we suppose, before the flood; it is practised among all nations, civilized and savage, and the gist of it lies in soaking the skins in different solutions of various vegetable substances of an astringent character until the tanning juices of those substances have combined with the whole skin and rendered it a new substance named leather. Oak and hemlock barks, sumac, willow, blackberries, catechu, kino, &c., are employed. Those who wish to get an account of the various processes and substances employed, must consult this book. We have only another remark to make, it is this, we have never known any of the metallic solutions to be employed in tanning, and from their nature, in rendering some vegetable substances insoluble, we believe that it would be worth the trouble for some of our tanners to make a few experiments. We would recommend the chloride of tin; it is made by feeding drop-tin into muriatic acid until effervescence ceases. The way to try it would be to make up a solution of it in a tub of cold water, until it stood about 1½° in the hydrometer; the skin should have undergone through the whole tanning process before it is placed in this solution, in which it should lie about two hours, and be stirred up two or three times. After this it should be well washed in cold water, and then finished in a milk-warm water bath, when it will be ready for drying. It is our opinion that a superior leather would be produced by this addition to any of the present processes.

Remarks about the Fair of the American Institute.

Owing to the great number and variety of articles exhibited at the Fair, and owing to the want of good classification and arrangement, we must have overlooked many good things in our notices of the articles exhibited. It could not be otherwise, for the articles are never arranged in classes because the place of exhibition has always been too small to allow of a good arrangement. One machine of one class stood at one corner, and another machine of the same class was to be found mixed up with a totally different group.

The Catalogue of the American Institute Fair has always exhibited an arrangement similar to that of a stone heap raised by a parcel of boys pitching the stones when sojourning home from school. The articles are not classified, nor does the catalogue afford the least clue to guide a visitor where to find such and such an article exhibited. We hope the managers of the Great Fair, next year, will have a good catalogue—an instructive one; they will find it a profitable speculation.

Banding Pulleys—A most important improvement exhibited at the Fair was a circular and an upright saw for sawing scroll-work, driven by an improved method of Banding Pulleys, invented by R. W. Parker, who is now residing at 58 Dey street, this city, and for which a patent was granted on the 17th of last February. By the power of one man at the crank, a person is enabled to saw, with either saw, through a two-inch plank; the circular saw running at 2,600 revolutions per minute, and the scroll saw 600 vibrations per minute. This was done while the writer of this turned the crank. We consider this improvement to be a most valuable one, and applicable to all machinery. For portable machines, in small shops, it is an improvement which must soon come into general use.

The improvement in this method of banding pulleys consists in arranging the driving pulley in reference to two other pulleys, that the band passing over these pulleys is not only pressed with any desired force against the periphery of the driver, but is also pinched between other pulleys operating upon the band as feed rollers.

Fine Arts.—In the fine arts, some of the most beantiful bronze castings we ever saw were exhibited, J. G. Gilbert, of 216 Pearl street being the agent. A gold medal was awarded for them. These castings were made by a new process of preparing the moulds. Flowers, animals, and other objects of nature can be copied exactly, and all their bounding lines of beauty, rendered permanent as the everlasting hills in metal.

Engraving on Steel.—A gold medal was awarded to A. H. Ritchie, of the firm of Bachia & Co., corner of Chamber and Centre street, N. Y., for a full length mezzotint steel engraving of the immortal Washington. It is the finest engraving, considering the attitude and the mass of light thrown upon the figure, we ever saw. The likeness is excellent and the whole composition of the picture is different from any other heretofore produced.

We have always endeavored to notice things strictly new, useful, and beautiful; but as we said before, amid such a confused mass, many excellent things have no doubt been overlooked. We would also state that a great defect, and one injurious to exhibitors at fairs, is the absence of a full description of the nature and action of the machines exhibited. A brief and clear description should be pasted up on every machine and apparatus. We hope the managers of the fair in the New York Crystal Palace, will attend to this hint, it will make the Fair far more interesting and instructive.

The New Crystal Palace at Sydenham, near London.

The last load of materials, the *debris* of the London Crystal Palace, were removed to their new site at Sydenham, on the first of this month. From all accounts the new Crystal Palace will exceed its predessor in its decorations and general arrangements. No expense appears to be spared in rendering it a model edifice—one of the grand sights of the world. M. Bonomi is occupied in arranging the specimens of Egyptian architecture, among which is a model of the rock-hewn temple of Abusimbel, sphinxes, obelisks, and those strange paintings which abound in the tombs of ancient Thebes. The intention is to illustrate, by this means, the different epochs of Egyptian history. Models of the celebrated Ghibardi gates, and the principal figures from the Medici chapel at Florence, which latter are deemed the master-pieces of Michael Angelo, have been obtained by Messrs. Jones and Wyatt, who are travelling on the continent of Europe for the purpose of securing the *chef d'œuures* of art for the People's Palace. There is a similar activity and spirit exhibited about the grounds as in the erection of the building itself. Sir Joseph Paxton has ordered 50,000 scarlet geraniums to be supplied next spring, and the celebrated collection of palms, belonging to the Messrs. Loddiges, of Hackney, have been purchased by the Company. The steam engines have been ordered to work the water that is to adorn the palace and grounds, and already erect columns mark nearly the entire length of the building. The proprietors of the obelisks and blocks of marble and stone which stood outside the great Exhibition Building, have presented them to the Crystal Palace Company.

Scarcity of Silver Coin.

The same scarcity of silver coin that has so long prevailed in the United States, extends throughout the European Continent, as will be seen by the following paragraph from the London Times:—

There never was known for many years so great a scarcity of silver currency as at present, in consequence of the very large exportations of silver that have recently taken place to Port Philip, Melbourne, Geelong, Sydney, and other ports of Australian colonies for the convenience of the adventurers at the gold diggings. Not a vessel leaves the ports of London, Plymouth, Bristol, Liverpool, &c., but takes out a considerable amount of both gold and silver specie, either by speculators who are proceeding to the above colonies for the purpose of making large purchases of gold from the emigrants now working at the diggings, or consigned by capitalists and bullion dealers to their agents at Port Philip, &c., for the same specific purpose. It is with much difficulty that the bankers in the city and West End can obtain silver currency to any amount either at the Bank of England or at the Royal Mint, to accommodate their correspondents in different parts of the United Kingdom with silver change.

At Birmingham, Manchester, Liverpool, and other large commercial towns, the demand at the various banks for silver is so great that they are unable to supply parties with more than £100 to £200, as not only is a vast quantity being shipped off to Australia and India, but the demands for silver bullion and specie for France, Belgium, Holland, Hamburg and the Continent, are also very extensive.

In consequence of this immense call for silver, it appears that the authorities at the mint intend having a considerable sum coined into specie, and likewise gold currency of half sovereigns for the convenience of the emigrants, who are placed in great difficulties from the want of a small circulating medium in exchange for their gold.

The French Infernal Machine.

This machine, which has been submitted to the examination of the most competent men, is composed of two tubes of thick sheet iron about three inches in diameter, and about eleven inches in length. To these two barrels are attached 120 cases made of thick cardboard, of the form and length of the Roman candles used in fireworks. Each of the large barrels was charged with heads of nails and pieces of iron and lead, and each case contained a ball. A second machine, similar to the former, was in course of construction, of which the police has also obtained possession.

Minute Mechanism.

There is a cherry stone at the Salem, (Mass.) Museum, which contains one dozen silver spoons. The stone itself is of the ordinary size, but the spoons are so small that their shape and finish can only be well distinguished by the microscope. Here is the result of immense labor, for no decidedly useful purpose; and there are thousands of other objects in the world, fashioned by ingenuity, the value of which, in a utilitarian sense, may be quite as indifferent.

Dr. Oliver gives an account in his Philosophical Transactions, by-the-way, of a cherry stone, on which were carved one hundred and twenty-four heads, so distinctly that the naked eye could distinguish those belonging to popes and kings, by the mitres and crowns. It was bought in Prussia for $1,500, and thence conveyed to England, where it was considered an object of so much value, that its possession was disputed, and became the object of a suit in chancery. This stone Dr. O. saw in 1687.

In more remote times still, an account is given of an ivory chariot, constructed by Mermecides, which was so small that a fly could cover it with its wing; also a ship of the same material, which could be hidden with the wing of a bee.

Pliny, too, tells us that Homer's Iliad, which has fifty thousand verses, was written in so small a space as to be contained in a nut shell; while Elia mentions an artist who wrote a distich in letters of gold, and enclosed it in the rind of a kernel of corn. But the Harren MS. mentions a greater curiosity than any of the above, it being nothing more or less than the Bible written by one Petre Bales—a chancery clerk—in so small a book that it could be enclosed within the shell of an English walnut. D'Israeli gives an account of many other similar exploits to that of Bales.

There is a head of Charles II, in the library of St. John's College, Oxford, wholly composed of minute written characters, which, at a small distance resemble the lines of an engraving. The head and ruff are said to contain the book of Psalms, the Creed, and the Lord's Prayer. Again, in the British Museum, is a portrait of Queen Anne, not much bigger than the hand. On this drawing are a number of lines and scratches, which, it is asserted, include the entire contents of a thin folio.

Picture Frame.

A picture frame on improved principles has been lately invented by John Wood, of New York City, who has taken measures to secure a patent. The object of this improvement is to conceal from sight, when not used, a key, or sheet of paper, &c., explanatory of the picture. For this purpose the explanatory key is fixed behind the picture on a hollow cylinder, within which is coiled a spring, which latter is held from unwinding by a ratchet wheel, &c. The apparatus is fastened in such a manner on the back of the frame as to be concealed from view, the key only being visible when unrolled, which is effected by drawing a tassel attached to the end. When it is desired to wind the key up, a catch is detached from the ratchet wheel, and the spring, having no check, uncoils, thereby causing the cylinder to revolve and thus wind up the explanatory key or diagram.

Captain Land, of the American clipper ship Challenge, died of dysentery, at Whampoa, on the 26 July. Upon examining his body, several rusty nails were found in him, one of which had passed through the left lobe of his lungs. It is thought that he must have swallowed them when a boy.

It is the highest duty, privilege, and pleasure for the great man and the whole-souled women to earn what they possess, to work their own way through life, to be the architect of their own fortunes.

All a Spaniard wants in this world is sunshine and garlick.

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Machinery and Tools as they are.

Since it is now certain that a World's Fair will shortly be held within our city, and that we may confidently expect a competition with foreign rivals for the prize of superiority, we have resolved to give our readers a synopsis of the present condition of Machinery, Operatives' Tools, and other apparatus employed in Manufactures, the Arts, and Handicraft in general. This account will not be limited to those in use in our own country, but will also comprise the newest improvements abroad, our aim being *not to tell* our artificers what *they already know*, but to give them information on subjects where they may be ignorant.

Our own epoch is most opportunely suited for such a purpose, as the late World's Fair in London brought together not only the fabrics, but many of the tools and much of the machinery of the workers of different nations. From their inspection much has been learned, namely, by what means the artificer of one nation excelled the artificer of another, and where the superiority lay. Moreover, from the prizes offered, the inventive skill of different nations was stimulated, and consequently much improved machinery was exhibited from the various workshops of the world, that would otherwise probably have never been produced, at least not for a longer period of time. The universal competition acting as a stimulant to precocious invention. There have therefore been lately introduced several improvements in the machinery and tools of many branches of art and manufacture, with which, doubtless, a large portion of our artizans and mechanics are unacquainted. It will consequently be serviceable to those who intend to exhibit, at the approaching New York World's Fair, to know what has been already done, and what improvements have been made not only in America but also in Europe, as competition may be expected from their people, as well as from our own. For this purpose we propose to give in our columns a series of articles on the above-named subjects, not merely a bare catalogue of names, but containing such information as will be of use to our readers. We must, however, premise that our remarks will, of course, be directed to those employments where striking improvements have been made; as our aim is to furnish information, it would be useless to dilate where there is nothing to be said. Where no new improvements have been made, no fresh information can be afforded. As we observed before, our purpose is to make our people acquainted with many processes of which, per haps, they are ignorant, not from any deficiency on their part, but from natural circumstances over which they can exercise no control. Such collections as were exhibited in the London Crystal Palace, and will be, we expect, exhibited in the New York Crystal Palace, can not otherwise be amassed toge ther. Distance of country, difference of language, want of time, and want of pecuniary means, prevent that general international communication which would tend so much to the spread of knowledge, so that it is only by such extraordinary efforts as a World's Fair that the mechanical knowledge of each separate division of the world can be known. In addition to what has been already said, many improvements are unknown, from being confined to a single locality, and sometimes even to a particular factory; these we shall endeavor to bring out, if possible, from their obscurity for the universal good; others, although patented, are not generally known, from negligence in making them public, and this latter category includes a greater number of valuable improvements than might be supposed. Improvements being often dropped from want of encouragement, or want of means to publish their advantage. Moreover, if such information were more widely spread, much inventive skill that is now idly, or rather uselessly, employed upon inventions that have already been made, would be diverted to a more profitable direction. It is not uncommon for several individuals to be exercising their ingenuity in discovering what has been already discovered, and although their invention does them infinite credit on the score of talent, to find it anticipated on the score of personal benefit. We would, however, wish it to be understood that it is our intention to give only a *resume* of the present state of machinery, &c., and that, therefore, particular inventions, unless of very material importance, cannot expect to be discussed. Unless some such arrangement is determined upon, it would be an endless task to notice every new invention which claims to itself the fact of being an improvement.

Those improvements, therefore, can only be noticed which have received the stamp of general approbation, or have gained the title by being brought into general use, or, finally, which bear evident proofs of deserving it.

In the choice of these latter, discretion and judgment will be used, for it should be recollected that every change is not an improvement. However ingenious an invention may be, especially in machinery and working tools, it cannot be called an improvement unless it is a change for the better, to suppose otherwise would be a contradiction not only of sense but of words. We shall therefore conclude for the present, hoping, in the number of next week, to commence performing what we have promised in this.

(To be Continued.)

British Association for the Advancement of Science.

(Concluded from page 59.)

Diamonds.—Mr. Tennent read a paper on the Koh-i-noor diamond. He considered the great Indian diamond, the Russian diamond, and Koh-i-hoor, were separate portions of the original Koh-i-noor procured from the mines of Golconda. That opinion was supported by the peculiar relation of the cleavage planes to the other sides, which could not otherwise be accounted for. A very interesting discussion ensued, in which Professor Tennent described the progress already made in the grinding and polishing of what he called the English portion of this far-famed stone. Referring to the diamonds procured in the Brazils, he related a fact which, he said, was told to him by a gentleman from Brazil. A slave in that country was one day wading in a river in search of the precious gems to be found imbedded in the strand, when he struck his crow bar in a spot which surprised him by its hollow sound. He repeated its blows, and soon struck the iron through a crust of siliceous particles cemented together by oxide of iron. On removing the concrete mass, the slave discovered a bed of diamonds, which were afterwards disposed of for £300,000. Such an immense number of diamonds being thrown upon the market, so overstocked it that nearly all the dealers became bankrupt, and upon the diamonds being introduced into England, the glut was so great that the results to the trade were equally disastrous, only three English houses being able to stand up against it. One of those persons was a gentleman in Leadenhall street, who was so largely engaged in the trade, that he had actually shown him (Mr. Tennent) a peck full of diamonds.

Sir David Brewster entered into some account of the same diamond. He said—In the course of last spring, I was requested by H. R. H. Prince Albert to give my opinion respecting different forms into which it was proposed to reduce the Koh-i-noor diamond, in order to make it an ornamental gem. In the state it then was, it exhibited an inferior display of colors to its glass model, and it was only by surrounding it by a number of vivid lights that its colored refractions could be developed. Having had occasion to observe some remarkable phenomena in small portions of diamond, an account of which was published in the Transactions of the Geological Society for 1836, I was desirous of examining so large a mass of diamond as the Koh-i-noor, before it was reduced in size, and covered with facets which would not permit it to be examined. His Royal Highness readily granted my request, and I had thus an opportunity of submitting it to the scrutiny of polarised light. In place of producing no action upon this species of light, as might have been expected from its octohedral structure, it exhibited streaks of polarised tints, generally parallel to one another, but, in some places, of an irregular form, and rising to the yellow of the first order of colors. These tints and portions of polarised light were exactly the same as those which I had long ago found in many other diamonds, and published in the Edinburgh Transactions for 1815 and 1816. In placing the Koh-i-noor under a microscope of considerable power, I observed in it, and also in each of the two small diamonds which accompanied it, several minute and irregular cavities surrounded with sections of polarized light, which could only have been produced by the extensive action of a compressed gas, or fluid that had existed in the cavities when the diamond was in a soft state. In an external cavity, shown in the model, and which had been used for fixing the gold setting, I observed with common light a portion of yellow light, indicating a yellow substance. Mr. Garrard and others considered it as gold rubbed off the gold setting; but as gold is never yellow by transmitted light, I considered the color as produced by a yellow solid substance of unknown origin. Sir Henry de la Beche having suggested to me that it would be desirable to make a general examination of the principal diamonds in London, I went next day to the British Museum, and found there an excellent specimen, which threw some light on the yellow solid to which I have referred. This specimen was a piece of colorless diamond, uncut, and without any crystalline facets, about three or four-tenths of an inch broad, and about the twelfth of an inch thick, and on its surface there lay a crystal of yellow diamond, with the four planes of semi-octohedron. This singular fact was illustrated by a large model placed beside it. Upon examining the original I noticed a pretty large cavity in the thickness of the specimen, with the extremity of which the yellow octohedron was connected, and finding a portion of amorphous yellow diamond in the other end of the cavity, I had no doubt that the yellow crystal had emerged, in a fluid state, from the cavity when it was accidentally opened, and had immediately crystallized on the surface of cleavage, I am well aware that such an opinion makes a good demand upon the faith of the mineralogist, but to those who have seen as I have done, the contents of fluid cavities, in crystal, solidifying, and even crystallizing in the face of the cleavage, while another portion of the contents of the cavity escaped in gas—to those who have seen in the topaz cavities numbers of regularly formed crystals, some of which, after being fused by heat, instantly re-crystalize, the conclusion I have drawn will be stripped of its apparent extravagance. In examining a number of diamonds in the Museum of the East India Company, to which Col. Sykes kindly obtained me access, and about forty or fifty in the possession of Messrs. Hunt and Roskell, I found many containing large and irregular cavities of the most fantastic shapes, and all of them surrounded with irregular patches of polarized light, of high tints, produced, undoubtedly, by a pressure from within the cavities, and modified by their form. Among these specimens I found one or two black diamonds, not black from a dark coloring matter like that in smoky quartz, but black from the immense number of cavities which it contained. Tavernier has described a large and curious diamond which throws some light on the subject of this notice. It contained, in its very centre, a large black cavity. The diamond merchants refused to purchase it. At last a Dutchman bought it, and by cutting it in two, obtained two very fine diamonds. The black cavity through which he cut, was found to contain eight or nine carats of what Tavernier calls black vegetable mud.

[This is a subject which we know will greatly interest Prof. Horsford of Cambridge.

The Village of Piedmont, Va.

This little village, situated in Hampshire Co., Va., opposite Westernport, Maryland, is the creation of the Baltimore and Ohio Railroad. The Cumberland Journal says:—It is beautifully located at the foot of the Alleghe ny mountains, and is surrounded by an amphitheatre of hills. Here is located the splendid engine house of the company, and here are to be its machine shops, unless it should be determined to continue them at Cumberland. The village already boasts its stores, warehouses, hotels, and private dwellings. Around it, on the sides of the mountains, are rich veins of semi-bituminous coal. Above it, a mile or two, is the mouth of Savage, where coal also abounds. Already are the coal properties in this region coming into demand, and we hear of recent sales that indicate an enormous rise in value. The New Creek Company are about to commence operations not far from the mouth of Savage, and several individual proprietors will likewise begin to open out in a short time. It is reduced to a certainty that the second track on the Baltimore and Ohio Railroad will be soon required for our coal trade.

Improved Telegraph Instrument

Mr. Clarke, of Philadelphia, exhibited at the late fair of the Franklin Institute held in that city, a very useful improvement in the telegraph register. By the ordinary arrangement, the operator has to use a key for winding up the register, but by Mr. Clarke's plan the register is self-winding. The winding motion is obtained by an extra magnet being placed in the register, and the closing and breaking of the circuit causes a lever to vibrate. This lever has a click at its end, acting in a small steel ratchet wheel, which causes the latter to revolve and transmit its motion by wheel gearing to the shaft of a spring contained in a box, like a watch. A spring is used for a motive power to the train of wheels, instead of a weight, as in the ordinary register. There is also an arrangement by which it ceases winding when the spring is wound to the power necessary to revolve the train of wheels. This is effected by two points coming in contact, and establishing a cross-current, which cuts off the current from the winding magnet, until, by its running, it causes the two points to separate, when the current flows through the magnet again, and the winding is continued. Another advantage of this improvement consists in the fact of a uniformity of motion throughout any number of messages being obtained.

Increased Use of Guano.

The Fredericksburg (Va.) Herald says the application of guano the last season or two, has been so highly satisfactory, that many farmers are operating on a large scale this fall. One produce house in that city has received an order for fifty tons from a Rappahannock farmer, and another for thirty tons. The Herald says:—

We have also had cited to us several instances wherein practical results were shown from the application of guano. One gentleman, whose means were rather limited, commenced a few years ago by the application of fifty pounds. At that time his farm raised a bare sufficiency of corn to support the ordinary want of his household and stock, whilst in the way of wheat he had but a small quantity to sell. He increased the application gradually as his increased crops allowed, until this year he has one hundred and fifty barrels of corn to sell, besides a very fair crop of wheat. He is able to apply what will be equal to about four tons of guano this fall, when but a few years since his means allowed him an application of only fifty pounds.

Manificent Donation.

Joshua Bates, a partner in the firm of Messrs. Baring, has conferred a donation of $50,000 towards the forming of a public library in Boston. The only condition is, that the building shall be an ornament to the city—that there shall be room for one hundred to one hundred and fifty persons to sit at reading tables—that it shall be perfectly free to all, with no other restrictions than may be necessary for the preservation of the books.

A Huge Man-of-War.

The English are busily employed in introducing screw propellers into their men-of-war; and so far as their navy is concerned, are determined to be always ready for action. The first-class British line-of-battle ship Windsor Castle, a three-decker, originally constructed for a battery of one hundred and twenty guns, was, a short time since, cut asunder at midships, and lengthened twenty-three feet, to furnish a suitable space for the accommodation of screw propelling machinery. She has just been launched, and her name is changed to that of the "Duke of Wellington." She measures nearly 4,000 tons, and mounts 140 guns. With her steam facilities she is probably the most formidable as well as the largest man-of-war afloat. The largest ship in the French navy is the screw propeller Napoleon.

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NEW INVENTIONS.

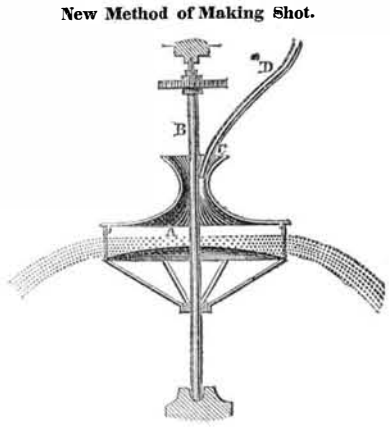
Improvement in Woolen Rovings, &c.

It is well known that woolen rovings in their untwisted state, cannot, at present, be used for weaving, knitting, &c., but have previously to go through what may be called a spinning process, by which the fibres of the wool are twisted together. John H. Bloodgood, of Rahway, Essex Co., N. J., has taken measures to secure a patent, by which the rovings can be used for weaving without the necessity of performing the above operation, simply by felting them as they come from the carding machine. This is done by steaming the rovings, and at the same time applying a pressure which, by its peculiar action, felts them together into a thread fit for any purpose for which twisted threads are now employed. The advantages are the cheapness of the process, as all the expenses of spinning are saved, and the fabrication of a material that may be advantageously employed as a weft when cotton warping is used. Cloth made of this felted roving thread, it is stated, is more easily knapped by the *teasles*, and also takes a finer finish in the dressing. It should be understood that no new improvements in machinery are claimed.

Meat Cutter.

Measures for securing a patent for improvements in the above-named machine have been taken by Anson E. Brooks, of New York City. The nature of the improvement consists in the employment of a series of adjustable beaters, arranged to act as a screw, and that can be set at different angles to allow the meat to be fed in fast or slow to the cutters, according as different degrees of fineness are required. To effect this purpose they are fixed on a longitudinal shaft, which operates in combination with another shaft set horizontally, and which holds the cutters in such a manner that, in addition to forcing the meat towards the latter, they also cause them to have a drawing cut. Another advantage is, that the meat is also forced more effectually towards the opening at the discharge end of the machine. This last office is performed by a scraper fastened at the screw end of the shaft on which the beaters are placed, and by which the meat is gathered up and discharged through the above-mentioned opening.

New Method of Making Shot.



The annexed engraving is a vertical section of an apparatus for manufacturing shot by means of centrifugal action, which is the invention of M. Louis Bonnet, of this city, who has taken measures to secure a patent. It is intended as a substitute for shot towers and other apparatus now employed for this purpose. It consists in substance of the following parts:—

A is a circular trough made of iron, it is secured on a vertical shaft, B, which is driven by wheel and pinion, or belt and pulley. The upper part of the trough is of a funnel-shape, C, and there is a pipe, D, inserted in this funnel for conveying the molten lead into the trough. The sides of the trough are perforated with a number of small holes of different sizes. The metal being poured into the trough, C, and the shaft, B, made to revolve at the rate of 350 revolutions per minute, the molten lead will fly from the centre to the circumference and through the holes against a circular partition of cloth surrounding the apparatus, at a suitable distance, which depends altogether on the fluidity of the metal and rapidity of the motion. The experiments which have been made with this apparatus have been very satisfactory to the inventor. More information may be obtained by letter addressed to the inventor at the office of the Courrier des Etats Unis, 73 Franklin street, this city.

Railroad Car Brake.

Measures for securing a patent for an improved Railroad Car Brake have been taken by L. B. Batcheller, of Arlington, Bennington Co., Vt. This improved brake is intended to be operated either in the ordinary manner by a brakesman, or to be set in action by the buffer rods when the car strikes against another car or other obstacle. The great merit of this invention consists in its quick action, whereas, in the common brake, much time is consumed in taking up the slack chain, and much of the power exerted is lost in overcoming the friction incident to the arrangement. The contrivance consists of two vibratory bars beneath the platform of the car, one at each extremity. These bars are allowed to move to and fro by means of a slot at each end, through which there passes the screw for holding them to the cross-pieces of the car. Vertical standards, with a hand wheel at the top, are attached to the vibratory rods. The two standards (one at each rod) are connected by a chain, so that when the brakesman turns either standard, the two vibrating rods are made to approach, and, by a suitable arrangement of levers and cross-bars, the shoes or segments are brought to bear against the wheels. When the brakesman relaxes his hold the rods are forced back by springs.

This new brake can likewise be acted upon by the buffers in the following manner: Attached to either vibratory rod is a lever, which is connected to the opposite vibratory rod by a chain, so that when either is moved by the buffer rods, a corresponding opposite motion is given to the other rod. Other levers enable the buffer rods to act upon the vibratory rods in the required manner. By a neat arrangement the buffers can be made to operate quickly or slowly upon the brakes, as desired.

WHITE'S PATENT EQUALIZING OR SELF-ADJUSTING TRUCK.

Fig. 1.

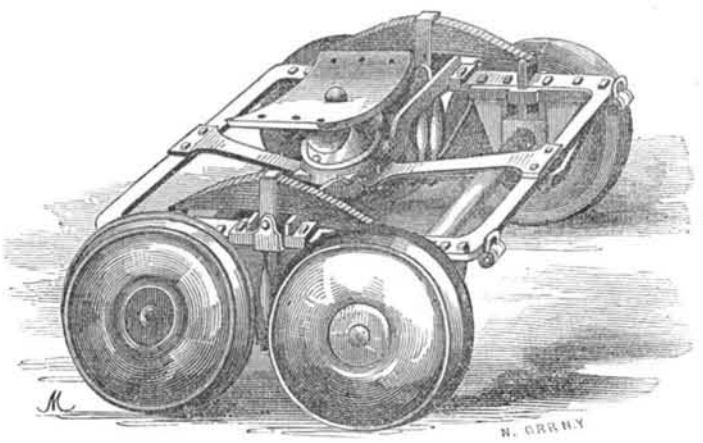
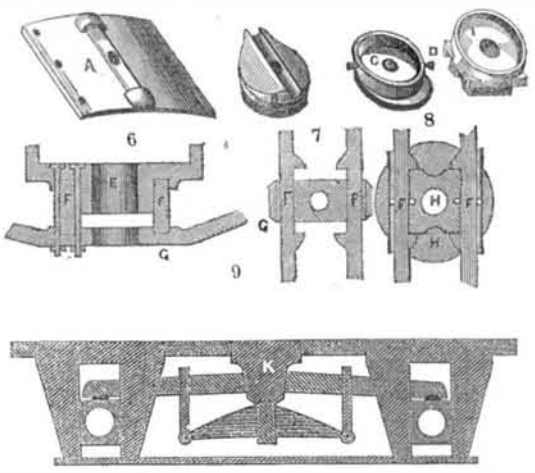


Fig. 2. Fig. 3. Fig. 4. Fig. 5.



The annexed engravings are views of a most important improvement in Railroad Trucks for Locomotives, Tenders, and Cars. The inventor is John L. White, master machinist at Corning, N. Y., of the Tioga Railroad. A patent was granted for the improvement on the 6th of last January, (1852.)

Figure 1 is a perspective view of the Truck; the other figures, 2, 3, 4, 5, 6, 7, 8, are perspective and sectional views of several parts of the improvement, and figure 9 is a longitudinal section of a low truck with the improvement attached. The same letters refer to like parts.

In order to render the subject clear, we will state, first, that the truck frame is united to a peculiar knuckle-joint at the centre, by strong bars of iron placed at right angles to one another (the peculiar joint being in the centre) and attached by metal straps to the springs. The boiler or car is then secured to a saddle plate on the top of the knuckle joint at the centre of the truck, so that the whole weight is thrown first upon this joint, and then distributed from it, as a centre, over the transverse supporting bars, to the springs at the sides, and from them, by stirrups, over the wheels, thus equalizing the weight on all the wheels. We would state, secondly, that the peculiar knuckle joint spoken of allows the Truck to have a rolling motion on the same, so that one wheel may be lower than the rest, or it may move over an elevation on an uneven track, and yet the boiler of the locomotive, or the body of the car, will scarcely be affected by the unequal position of the wheels. We will now explain the minor figures of the engravings: A (fig. 2) is the saddle or top plate of the central knuckle joint; its under side is shown in order to exhibit its convex form, and to show a semi-cylindrical projection, which has a knob at each end; this projection is a rail or rider, which is fitted into a recess, shown in the top of the circular metal block, B, (fig. 3); the knobs keep the saddle rider from moving endwise in its recess. The boiler, or car body, is bolted to the top of the saddle, A, by bolts passing down from the smoke-box. The block, B, is placed with its recess longitudinally in the direction of the length of the boiler. As the knuckle joint is placed in the centre of the truck, the weight of the boiler rests upon the centre. C, fig. 4, is a top view of an eccentric metal cup, in which the block, B, sits, and is secured by screws, D. Fig. 5 is a collar box; it can be made in one or more pieces. It has a recess, I, on its top, in which the cup eccentric, C, snugly sits, and in which it is fitted. This collar box is bolted to the cross brace bars of the truck-frame, as shown in section, fig. 6. F F and G are the cross or radiating metal brace bars, as shown in fig. 7. The under side of the collar box, with the brace, G, removed, is exhibited in figure 8. There is a central opening through all these parts for the reception of a vertical axis or loose bolt. If we suppose the cup eccentric, C, to be placed in the collar box, I (a section of this box is exhibited in fig. 6), then the metal block, B, fitted and secured into the cup, C (the recess placed lengthwise of the boiler), and then the saddle, A, placed on the block, B, with its projection or semi-cylindrical rider in the recess of the block, we have all the parts of the central knuckle-joint in position. A bolt is then inserted down through the central opening, E, and secured at the bottom by a nut, H; this bolt is a vertical axis, and is loose in the orifice. The boiler is then bolted to the top of the saddle plate, and as its weight comes exactly on the centre, the knuckle joint formed by the rider on the under side of the saddle, and the recess in the block, B, has a sufficient bearing for the boiler, yet allows it, and the truck also, to have a slight side rolling motion, which keeps the boiler, or body of a car, in line, while the wheels may be moving over a very uneven or winding track. The weight of the engine, or the car, is also very equally distributed over the wheels, whatever position they may be in. As the boiler, or car, is placed on the centre of the truck; the springs are connected with the side radiating cross-bars, and the end of each spring rests on a stirrup, which is connected with the block of the axle box of each wheel; the weight, therefore, is taken off by the springs, as levers, and thrown equally over the wheels; each wheel, by this arrangement, has also individual freedom for separate flexible action on an uneven track. The section, figure 9, shows a lever resting on the two axle boxes of the wheels on one side, which lever is secured by straps to both ends of the spring, and a pedestal, K, rests on the centre of the spring. This shows the application of distributing the weight from the springs to the axle boxes by the said lever, and is useful to be applied to low trucks. Neither boiler nor car body is shown attached, and the figures are on a very small scale, but we believe a careful reader will understand the improvement that we have endeavored to render as clear as possible. The radiating brace bars, to which the knuckle joint central parts are united, and which support the same, curve downwards at the centre, to bring the knuckle joint as low as possible. As the weight rests upon the centre, the frame of the truck, with the exception of the centre supporting brace bars, can be made much lighter than those in common use.

The cup eccentric, C, performs an important office; by loosening the screws it can be turned so as to bring the knuckle joint formed by the block, B, and saddle, A, into proper line, to make the engine track square on the rails and for setting the engine, and is a device which will save the flanges of the wheels from wearing off. The locomotive rests entirely upon the centre of the truck frame, which forms a centre bearing on the knuckle joint, and at the same time the truck frame is kept parallel with the boiler (or a car body) by the rolling flexible knuckle joint described. As this joint equalizes the weights on all the wheels, it is a most valuable truck for keeping on the track, and at the same time there is less danger of any part breaking, than there is on the rigid trucks now in use. To us it appears to be a good improvement, one that will conduce greatly to the safety of railroad travelling, and to the economy of the "rolling stock." A silver medal was awarded to the inventor by the American Institute at the last Fair.

These improvements, by imparting such a flexible character to the Truck, and equalizing the weight on the wheels, enable a locomotive or car, which may be placed on this Truck, to move over an uneven road with greater safety and economy. Our very best roads are more or less uneven, especially in the Spring, when the frost is leaving the ground, it is therefore applicable and necessary for all our railroads. The improvement was first suggested by the rough track of the Corning and Blosburg Railroad, from which the engines were continually running off; the patentee having charge of the machinery, had his inventive faculties impressed into the service of inventing a remedy. This "Knuckle joint Truck" is the antidote to the evil; it has been employed with signal success for two years on the said railroad, and is now about to be introduced on the New York and Erie and several other roads.

More information may be obtained by letter addressed to the patentee as above.

A small vessel of about 100 tuns, called the Comte le Horn, about to be launched at Nantes, is built of zinc, as an experiment of the adaptation of that metal to shipbuilding.

The total amount contributed to the National Monument Society, during the month of October, and received at their office, is $2,189.

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Scientific American

NEW-YORK, NOVEMBER 13, 1852.

Industrial Fairs.

It is the duty ot every mechanic and artisan to study and show himself to be a good workman. Whatever a man does let it be done well; a slovenly, careless workman is a disgrace to his race and country. There is room for the display of taste and talent in every trade and art, and a man who wishes to excel—a laudable ambition—will embrace every opportunity of extending the boundaries of his knowledge in all that relates to his trade, art, business, taste or interests. It was a happy day for the progress of the arts, when the first Industrial Fairs were instituted. We do not intend to present a history of their rise and progress, we only wish to present a few ideas respecting the benefits which necessarily flow from them. Let us take, for example the last Fair of the American Institute which has just closed. What were the articles exhibited which will conduce to greater excellence in construction, or in originating superior ones? We cannot tell specifically, but we do say, that much was exhibited which must produce good effects in exciting to greater effort, those who were exhibitors, and many more who were only spectators. Every one who appears at a Fair believes he has something more than common to show; he does not go there with a palpably inferior something which will make him appear ridiculous. No, he believes that the work of his hands and head has some merit in it, and he is proud to show it. This is the reason why so many things of beauty, skill, and ingenuity are collected at such exhibitions. Some visitors go to Industrial Fairs for pleasure, such as to see the curious and pretty things, but a large number of all classes go to see what is new, and pick up what is useful. "There," said an inventor in our hearing, "is the very thing that has bothered my head for years; it always baffled me, and here it is, and so simple, too." He really felt some relief, and was a gainer by coming to the Fair. It is a wise provision ot some German corporations, which compels a mechanic to travel and work for some time in different shops before he will be permitted to set up business in his native place. Practice leads to perfection, but then a person must have a model—a standard of excellence to practice upon. The excellence of one artist stirs up the spirit of emulation in another to excel, and certainly the more masters in the arts, who exhibit, the more instruction will the spectators receive. Men accustomed to view the same round of things continually, move in very circumscribed circles, their knowledge is as limited as that of the islander who believes that his own puny isle in the ocean is the only dwelling spot in the world for man.

The great utility of industrial fairs is their economy to visitors who go to see for instruction. Here mechanics, without travelling to any great distance, can see excellent machines from all parts of the country; manufacturers can also see a great variety of manufactured goods from various near and distant places. A wide field for comparison and healthy stimulation to excel is therefore presented at such Fairs. The products are so various that all the world might come even to a small Fair, and find something of a superior character to interest every one of the vast crowd. There is not a solitary individual who attends our Industrial Fairs, if he has any powers of observation at all, but learns something. The endless variety of objects presented, from needles and pins, boots and coats, knives and spoons, shirts and frocks, &c., to reaping machines, spinning frames, and steam engines, cannot fail to impart new ideas, and expand the mind. We therefore look upon Industrial Fairs as a grand element of civilization, of progress, and good to the human family. Wherever an industrial exhibition is held, it is the duty ot our citizens to give it all the patronage and encouragement they can, and it is for their own interest to do so. The great "World's Fair" has given an impetus to such exhibitions, which, we trust, will exert a permanent influence for good, and not pass away like a thing of foible and fashion.

Shawls.

From the earliest ages up to the present date, shawls have been worn as a graceful article of apparel by the inhabitants of almost every nation. It is worn by both male and female in oriental countries now, and it was worn by the young maidens and warriors of Palestine, in the days when Israel's Shepherd King tuned his harp to the noblest strains that ever fell upon the ears of man. The shawls of ancient oriental nobles, were enriched with the famous purple dyes of Tyre, and the royal sisters of Macedonia's hero, no doubt worked with their own gentle fingers the embroidered scarf that waved from the shoulders of the conqueror of Persia. The shawl is the most distinguished article of dress, and ever has been, and it is no wonder that the very manufacture of it has conferred fame upon nations, districts, and cities, the inhabitants of which have become distinguished in its production. Who has not heard of the beautiful crape shawls of Canton, the fine woolen shawls of Cashmere, the camel hair shawls of Bokhara, the woolen and silk shawls of the city ot Lyons, in France, and those of the city of Paisley, in Scotland. In America, England, and among the most of the inhabitants of Europe, except Scotland, the shawl is not an article of male apparel, but the passion for shawls is prevalent among the females of almost every land, our own among the number.

The camel hair shawls of Bokhara are the finest and dearest in the world. They are woven in the simple oriental loom by hand (for the natives there have not yet learned the use of the *fly pin*), in strips of about eight inches wide, and these are sewed together with the needle, and done so cunningly, that the joinings cannot be discovered by the eye. These rude artisans weave most beautiful and chaste patterns, which are copied direct from flowers or leaves placed beside the weaver; they copy nature, and our best artists are distinguished as they approach nearest the works of this teacher. Some shawls are very expensive, and at the court of Russia, the ladies judge of the grandeur of one another by their shawls as by their diamonds.

The finest shawls manufactured in Europe are those of Lyons. The French have for a great many years been distinguished for their fine taste in patterns; but the pine-leaf of the oriental shawl forms the most prominent and beautiful radiating figure in all shawl patterns. It has at least become to be regarded as such; no shawl of flowery pattern, therefore, seems to look well without it.

Paisley, in Scotland, has long been distinguished for beautiful woven shawls. The great improvement in their weaving, however, is due to that ingenious Frenchman, Jacquard, the inventor of the Jacquard loom, indeed, it is strictly true, that the fine silks and woolen shawls now made in Britain were introduced by Frenchmen—the Hugenots who were banished from France by the Revocation of the Edict of Nantes. The Paisley woven shawls are the kind most commonly worn in America; some of them are very beautiful, and as it respects price, no shawls of the same quality can compete with them. Shawls of the Scotch character have been manufactured for some years in the Bay State Mills, Mass., and at the West Troy Mills, N. Y. We have seen some very beautiful shawls which were made at both of these establishments, and at the recently closed Fair of the American Institute, some very excellent shawls made at West Troy were exhibited. They were of the tartan pattern (checked) and appeared to good advantage. This kind of pattern belongs apparently to the celtic tribes, but especially those of the Scottish Highlands, where men as well as women wear them.—The shape of the Paisley shawl, and the tartan (commonly called the plaid) is rectangular, long, and graceful, and made so as to double over on the shoulder. We have seen accounts of the gentlemen's plaid shawl having become a common article of dress in many places in England, and it is now seen not unfrequently in France. It is beginning to be worn by American gentlemen, and is not now a subject of wonder in our streets; it is also for sale in all our large stores, and as it is a most convenient and comfortable article of apparel, it may yet become (not fashionable we would say) consistently common sense, and common to wear them. It appears to us that these shawls can be profitably manufactured in the United States; we would therefore be glad to see a more extended market opened for them. The shawls of Britain are made from Australian wool, some of which is very fine, and it is furnished at a very moderate price. Our country offers a wide field for the growth of wool, which must not be neglected if we desire to become distinguished for the manufacture of shawls. We see by the London Mechanics' Mag., that a patent has lately been taken out by a Paisley weaver for making two piled shawls out of one, and using no wires in the weaving. A double piled shawl is woven with the pattern on both sides, and then it is split open to divide it into two. But there is one kind of shawl to which we would wish to direct the attention of some of our manufacturers, we mean the fine woolen printed shawl, which is produced by block printing of many beautiful patterns, and in great numbers in Lyons, France. The woven shawl looks heavier and richer than the printed one, but for light shawls we prefer those that are printed. Every kind of pattern can be produced by block printing, at one-fiftieth of the cost required to produce the patterns on the woven shawls. The shawls for block printing have but to be woven plain, then washed, stretched, and made ready for the printing; the colors are printed on them with blocks, of any pattern, and after this they have but to be steamed in a box where they are covered with rice husks to *raise* the colors, after which they are soon ready for the market. The woven shawl has its pattern punched in cards, then laced in the harness of the loom, and then woven with yarn of various shades and colors, a tedious and expensive operation. Some harness for looms cost an enormous amount of money; one shawl exhibited at the World's Fair, was so intricate and beautiful in pattern, that the harness for weaving it cost $2,500. After the woven shawl is out of the loom, it has to be clipped, singed, pressed, &c. Now all this tremendous amount of operations have to be performed to produce the pattern, this can be done by block printing in as many seconds as it requires days—and for some patterns weeks and months,—to produce a woven pattern. Long shawls are the most fashionable and the best; we do not know whether Cooper's "Skimmer of the Seas," the hero of the "Indian Shawl," wore a long shawl or a short one, we only know that it was a rich and beautiful one, and the time will come, we believe, when they will be more commonly worn by both sexes, instead of only one, as is now the case in our country.

Latent Ingenuity----Railroad Prizes.

It is well known to our readers that F. M. Ray, of this city, offered prizes amounting to $3,000 (the advertisement was published on page 159, 7th Vol. Scientific American), for improvements in machinery, &c., for the prevention of railroad accidents, &c. One prize was $1500 for an improvement to prevent the loss of life by collisions, and the breaking of axles. Another was $800, for the best method of excluding dust from Railroad Cars. Another was $400, for the best brake. Another $300 for the best sleeping or night seat for cars. These premiums were open for competition, and the competitors had their inventions on exhibition at the late Fair, the judges being chosen by a committee of the Institute. The offer of these prizes has impressed us deeply with the conviction that such prizes are of the greatest consequence to our country; they have drawn forth an amount of ingenuity which took us by surprize. We expected to see quite a number of competitors for the said prizes, but we did not expect to see so many. The number of improvements, their variety, and the ingenuity displayed by the majority of them, proclaim this great fact, "there is an amount of latent ingenuity in our people, which, if called out by the offer ot large prizes for certain definite improvements, would greatly advance the prosperity, and honor of our country."

We understand that the committee appointed to examine the railroad inventions in competition for the prizes, do not wish to decide upon the merits of any of them, without submitting them to a fair test on a large scale. It is easy to test some of the improvements exhibited, such as a chair; but many of the exhibitors, we suppose, have not the means to put their inventions in operation on a large scale. To them, unless some good generous patrons do it for them, the prizes have been offered in vain. The Committee, in coming to this decision, have acted, as appears to us, in a most prudent manner; but when the advertisement, offering these prizes, was presented to the public, these conditions for testing the said improvements should have been made known. It is scarcely fair to advance new conditions for testing an invention after it has been presented.

It would be well for the interests of every Mechanics' Institute, every Agricultural Society, and every association for the advancement of Art, to offer one or two large prizes every year, for some new improvements, to accomplish such and such results. We believe that a great amount of good to our country, would be accomplished by such a course of policy, for such improvements confer benefits upon all classes. The reward of a medallion prize is all very well, so far as it goes, but we want something more. According to the value of a prize are the natural passions of acquisitiveness and love of distinction excited to win it; a greater amount of genius will therefore be stirred up to win such a prize, and the mental faculties of every inventor will be intensely concentrated to carry off the noble reward.

We present these few remarks for the purpose of directing general attention to the duty of impressing upon every one of the Institutions we have mentioned, the importance of carrying into practice the policy we have recommended.

A Large and Small Wheel.

We have received a letter from a brother editor in Muncy, Pa., stating that a mathematical question had been mooted in that place, which caused more excitement than the general election. The question is this, "Take two wheels of six feet in diameter, and one of three feet, and secure them fast on an axle—putting the small wheel in the centre of the other two, and then make three tracks for them to run upon, elevating the centre track to the small wheel, so that all will have an equal and proper bearing on the three several tracks to revolve on the same axle; will they revolve alike?" This question, he says, has been referred to him for solution, and his opinion is, that "wheels made fast on the same shaft will all revolve alike." This decision has been contradicted by others, who assert that, "although the three wheels are fixed on the same axis, the small one must *slide* part of the time, while the large ones revolve." He sends the question to us to give the why and wherefore. We have a great number of such presented, but we seldom do anything more than look them over, because such questions must necessarily take a great deal of time for examination—more than we have to *give away*, but as this comes from a brother chip, we will present it clearly. The three wheels will revolve in the same time, and the small one will not slide. The circumference of each large wheel is $6\times3{\cdot}14159=18{\cdot}84954$, that of the small wheel is $3\times3{\cdot}14159=9.42477$. One revolution of the large wheels will describe a straight line on the track of 18·84954 feet, while one revolution will make the small wheel describe a straight line on its track of 9·42477. If the small wheel slides, and yet makes one full revolution, it must describe a line of greater length than this. Well, the question is now put upon those who dispute the decision of our correspondent, to prove how much it slides.—This is altogether a different question from that of the power required to propel wheels of different sizes, and their *vis viva*.

Machinery for Cuba.

Very few persons are aware of the large amount of machinery that is annually shipped from the United States, particularly from Boston, to Cuba. On account of the large crops which have been produced there the last few years, and the large demand for molasses and sugar, machinery has been, and is now, in constant demand, for the manufacture of it.

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LIST OF PATENT CLAIMS

Issued from the United States Patent Office.

FOR THE WEEK ENDING NOVEMBER 2, 1852.

PILE WIRES AND PINCERS, FOR WEAVING PILE FABRICS—By E. B. Bigelow, of Clinton, Mass.: I do not wish to confine myself to the precise form of the parts represented; nor do I claim constructing them for hand looms; but I claim making one part of the pile wires, which is to be grasped by the pincers, wedged-form or oral-shaped, in combination with grooves in the jaws of the pincers, to conform thereto, substantially as specified.

EDGE PLANES FOR SHOEMAKERS—By Nicholas Bucker, of Weedsport, N. Y.: I claim securing the plane iron or knife, in a sliding tung, passing through a mortise in the body or handle of the plane, substantially as set forth, whereby, with great simplicity of construction, I obtain the facility of adjusting the instrument to the thickness of the sole of the boot or shoe, and of employing the draw cat.

SEWING MACHINES—By Christopher Hodgkins, of Boston, Mass.: I do not claim, in the mechanism for feeding the cloth, a notched bar, which has a vertical or up and down motion, for fastening the cloth upon and relieving it from the notches of said bar, by striking it against a yielding plate, and a lateral motion, or motion forwards and back; but I claim the employment of one or more burr wheels, applied to the carriage, and kept continually against the cloth by a spring (so as to preserve the cloth from falling away from the spring plate or presser over it), in combination with a spring brake, operated as described, the whole being combined and made to operate together, as specified.

And in combination with the presser and the lower needle, I claim a mechanism by which an increase of thickness of the cloth is made, the lower needle to the left, the distance required to bring it into correct position with respect to the upper needle, so as to prevent the said upper needle from passing into the cloth before passing into the bow of the thread of the lower needle, as set forth.

And I claim the combination of the slide rod, the box, screw, slotted arm, shaft, arm, I, connecting rod, slide, stationary plate, and cam plate, as applied to the fulcrum pin of the lever, and to the pressure for the purpose of moving the lever, with respect or nearer to the cam, for the purpose described.

VIBRATING PROPELLERS—By Franklin Kellsey, of Middletown, Ct.: I claim the combination, in a field or row of a multiplicity of inclined planes, or sculls secured by gudgeons, on one of the sides thereof, in a frame vibrating horizontally, and the graduation of their propelling velocities by a similar multiplicity of check pins or stops, so adapted to the respective planes or sculls, that, in vibrating the same, they may propel as nearly as possible in equal times, and thereby reduce the propelling principle of the tail of a fish, as nearly as may be, to mechanical purposes, as described, for the propelling of all kinds or classes of vessels, or boats, by the power of steam, or other power, and with or without sails, as occasion may require.

GAS METERS—By John Laidlaw, of New York City: I claim the chamber and syphon, in combination, in the manner substantially as described, with the pipes, or other pipe or pipes, having an opening, or openings, at the required level of the liquid in the metre, for the purpose of preserving the level and discharging the surplus liquid from the metre.

SAW GUMMERS—By J. D. Olstot, of Springfield, Ohio: I claim the combination of the frame, shoe, and set screws, in the manner, and for the purpose set forth.

WIRE FERRULES—By Wm. T. Richards, of New Haven, Ct.: I am aware that wire ferrules have been made, when the coil has been cut directly across the wire, I therefore do not claim the manufacture of wire ferrules, as such, but I claim the manufacture of ferrules from iron wire, by cutting them from a helical coil, in such a manner that both ends of each ferrule will be perfectly smooth, true, and square across at right angles to the length, so that no other finishing of the ends will be needed to render them fit for use, and so that when soldered they will be the most convenient and durable ferrules which can be made, when manufactured in the manner described.

SEED PLANTER—By Chas, Randall, of Palmyra, Ga.: I claim the two hollow discs, combining a hopper, plow, and carrying wheel, substantially as described, in combination with the segment plates, or their equivalents, by which the discharge of seed is regulated, operating substantially as set forth.

COOKING STOVES—By M. C Saddler, of Brockport, N. Y.—I claim the guard plate for carrying the products of combustion under the oven, that part thereof may pass around, and over it to the front, and the rest continue to and up the back flue, substantially as specified, in combination with the recess in the rear of the fire chamber, for extending a portion of the fire near to the oven, and the deflection plate for dividing the draught and carrying it towards each end of the oven, as specified.

SEED PLANTERS—By Francis Townsend, of Cambria, N. Y.: In combination with the regular and positive discharge of seed by means of the ordinary seed distributor, of seed drills, I claim the supplemental or occasional discharge of seed, by a supplemental seed distributor, put in and out of action at the discretion of the operator of the machine, substantially as set forth.

SEED PLANTERS—By C. S. Trevitt, of Ellicottsville, N. Y.: I claim the combination of the perforated register plate, the adjusting screw, and the springs, arranged and operating as described.

SEED PLANTERS—By Henry Vermillion, of Rising Sun, Md.: I do not claim the use of a reciprocating gauge plate, having oblique feed openings therein, operating in combination with openings of different obliquity, in the grating plates and bottom of the hopper, for increasing or diminishing the feed of the seed to be sown, while the machine is in motion, by increasing or diminishing the traverse or sliding movement of the gauge plate.

But I claim the employment of the pivoted oscillating plate, when made with oblique openings, on opposite sides of its centre, reaching to and forming outlets at the circumference of said plate, in combination with segmental or other similar openings above the oblique openings, and a central annular opening in the ring plate, whereby, during the oscillation of the pivoted plate, the seed is not only discharged from the outlets of the oblique openings over the circumference of the ring plate, but also through the central annular opening of the ring plate, from the centreward ends of the oblique openings.

VENTILATORS—By David Wells, of Lowell, Mass: I do not claim a ventilator made of a series of flat plates, arranged in a circle with openings between them, nor do I claim one made of a series of plates arranged in a circle or around an axis, and with openings between them, and each made to stand tangential or curved (transverely) to the arc of a circle or curved line of the set of plates; but I claim a ventilator constructed of a single series of curved or angular plates, and openings, and capped, connected with a tube or flue, and having each plate curved or made angular convexly or concavely, out of the general line of their arrangement around a common axis.

SECURING VAULT AND SAFE DOORS, ETC.—By F. C. Goffin, of New York City: I claim securing or fastening the doors of safes, bank vaults, &c., by means of movable flanches arranged and attached as described, by which means a continuous bolt is formed all around between the door and its mouthpiece, preventing the admission of air into the safe, which is thereby rendered secure against fire, and the door against force.

COUNTERBALANCING HARNESS IN LOOMS—By Jas. Greenhalgh, of Waterford, Mass: I do not claim the mere upright position of the jacks, or the mere counterbalancing of the harness; but I claim the construction of the long double heddles or jacks, in such a manner, and so hanging them on the axle by a short arm, or its equivalent, that, in their vibrations, neither end of them shall pass beyond a vertical plane passing through the axle on which they rock or oscillate, so that the weight of the jacks shall be thrown outside of their points of suspension, thus counterbalancing the weight of the harness.

SELF-ACTING MULES—By Wanton Rouse, of Taunton, Mass.: I claim (without confining myself to the precise construction and arrangement of the parts, or to the precise manner of operating them), first, backing off or reversing the spindles, to unwind the yarn from them, and regulating or altering the amount of backing off, as the building of the cops progresses, by means of a step or incline of varying form, extending along a revolving cam, or its equivalent, substantially such as is exemplified on the cam, the said step or incline governing the revolution of the spindles.

Second, the mechanism for making the finger, through which the irregular surface of the cam, or its equivalent, acts upon the mechanism which drives the spindles in backing off and building on, traverse the said cam, or equivalent, and keep it to the surface, consisting of the screws, the nut, cord or chain, lever, and stud, operating in combination, as described.

MACHINES FOR DRILLING STONE—By L. P. Jenks, of Boston, Mass. (assignor to J. W. Page, of West Roxbury, Mass., assignor to G A Gardner, of Boston, Mass.): I claim the arrangement, in a swinging or other frame, for the purpose of drilling rods, of two cross-heads, the one with a reciprocating motion, and the other connected therewith, and bearing the drill with a reciprocating and progressively advancing motion, substantially as described, and this, however such alternate advance and recession may be effected.

I also claim the arrangement of a sliding bar, for the purpose of changing both the rate of rotation and the rate of advance of the drill, by one movement, for the purpose described.

I do not claim the ratchet wheel and pawl holder, operated by the inclined groove by itself, but I claim the making the ratchet cylinder, or equivalent rotating arrangement, sliding upon the mandrel or drill stock, as the same advances, in such manner as that the pawl holder projection retains its place in the inclined groove, as described.

SEWING MACHINES—By J. G. Bradeen, of Boston, Mass. (assignor to himself and Geo. Perkins, of Malden, Mass.): I claim two rotating draft hooks or their equivalent, separate from the needles in combination with the two needles, and two thread guides made to be operated together, as specified.

And I claim the improvement of so constructing and operating the needles and thread guides, that each needle, directly after passing into and through the cloth, shall pass through the thread guide, which is on that side of the cloth, opposite to the side of it, in which the needle first enters, meaning to claim the arrangement of each needle and its thread guide, respectively on opposite sides of the cloth, they being constructed and operated as specified.

I also claim the combination of the rocking thread lifter, or its equivalent, with the needle and presser, the said thread lifter being operated, as described, by the thread guide lever, or any other proper means.

HAND SEED PLANTERS—By Wm. Bullock, of Philadelphia, Pa.: I claim, first, a seed planter, having a tube or tubes, which, in operating the planter, are closed, when placed in the ground, and so arranged that it or they can be opened while in the ground, for the purpose of letting the seeds out.

Second, the arrangement of two or more tubes in such a manner that the operator can place the seed in a hill at specified distances apart.

Third, the feeders, having a sloping cavity at the outer ends, and so arranged that, as the seeds are carried up they will slide out and pass into the tubes.

Fourth, the arrangement of the feeders and jaws, or valves of the tubes in connection with the handle, by which the machine is carried, so that the feeders and jaws, or valves, can be operated by the same hand with which the machine is carried.

DESIGNS.

COOKING STOVES—By Jas Pratt (assignor to Bowers, Pratt & Co.), of Boston, Mass.)

PUMP CURB—By J. W. Wheeler & O. B. Latham, of Seneca Falls, N. Y.

TOVE PLATES—By Wm. M. Snow, of Providence, R. I.

COOK STOVE—By N. S. Vedder, of Troy, N. Y.

Tremendous Excitement Along the Wisconsin River.

We learn that upon the recent deepening of the canal connecting the Fox and Wisconsin river, a large share of the Upper Wisconsin waters passed through the canal into Fox river. It is said that the volume of water, which has ever since flown into the latter river is equal to sixty feet in width by three feet in depth; and, consequently, the Wisconsin waters have been drawn off to an equal extent. Some time elapsed before the inhabitants along the river discovered the cause of the unprecedented fall; but the facts were at length discovered, and ever since the excitement has scarcely been confined to reasonable bounds. Meetings are being held at all the villages, to organize for resisting the outrage of the Board of Public Works, in permitting the Wisconsin waters to be plundered for the benefit of Fox river.

For the Scientific American.
Reaping Machines.

On my arrival here, from Chicago, I found, in the "Scientific American" of the 23d ult., quoted from "The Niagara Mail," a statement "that the Reaper was invented in Scotland twenty years ago, and re-invented by Mr. McCormick, a Scotchman in the United States, who introduced it to the World's Fair," —with similar claims in relation to Hobb's Lock and the Yacht America—together with your contradiction of that statement, except that you "do not deny" the invention of *the* Reaper, as claimed, in Scotland, "although," as you properly say, "bearing a Scotch name, Mr. McCormick is a native of Virginia; and if he re-invented the Reaper, it was original with him," &c.

I have also observed, in foreign papers, similar claims—that *the* Reaper was originally invented by Rev. Patrick Bell, of Scotland, one of which was sent to this country in the year 1834, from which the American Reaper was probably copied. It is said, in an article published in the "Journal of Agriculture," and the "Transactions of the Highland and Agricultural Society, of Scotland," by Mr. Slight, Curator of the Society's Models, that "all the Reaping Machines now used in the Union are based upon the same principle, which is the *leading feature*—the CUTTER—in Bell's."

In answer to an inquiry of yours, over the signature of "Geo. K. Fuller," of the State of New York, I find a letter in a late number of your paper, bearing testimony to "the importation of the Scotch Reaping Machine, in the year 1834," its cost ($345,40), and "the first trial of its working powers, the following year, made in the presence of the Rev. Mr. Bell, the inventor," and others, "in the reaping of a level field of wheat of from two to three acres, in about as many hours," with an explanation of yours annexed, "that O. Hussey's Reaper was *patented* in 1833, and McCormick's in 1834."

With no disposition to detract from the merits of Mr. Bell, or any other inventor, I beg leave, through your widely circulated and valuable Journal, to make the following further explanations in relation to this matter, in order that your motto, "honor to whom honor is due," may be fully carried out.

With regard to the origin of my Reaping Machine, Hon. Edmund Burke, ex-Commissioner of Patents, in a letter addressed to Senators Douglas and Shields, bearing date March 4th, 1850, says, "When both of these patents were granted, the Patent Office made no examination upon the points of originality and priority of invention, but granted all patents applied for, as a matter of course. Therefore it is no certain evidence that, because an alleged inventor procured a patent before his rival, he was the first and original inventor. It, in fact, was a circumstance of very little weight in its bearing upon the question of priority between the parties. Besides, the testimony of Mr. McCormick presented to the Board of Extension, clearly proved that he invented and put in operation his machine in 1831, two years before the date of Hussey's patent,"—when, too, there was more grain cut with my machine than with Mr. Bell's in 1835, as above stated. Again, the following is from the Report of the Committee on Patents of the Senate of the United States, reported March 30th, 1852:—"That, testimony was thereupon taken, in compliance with the order of the Board; and by the proof submitted on the part of said McCormick, it appeared conclusively that he invented his machine, and first practically and publicly tested its operation in the harvest of 1831;" and that "from the exhibits referred to your Committee, it appears that his [Hussey's] machine was first constructed and operated in 1833: (see exhibit 17)." The evidence here referred to was the sworn statement of Mr. Hussey himself as a witness in another case.

Now, while it is true that at the time of the original invention of my Reaper, and for many years thereafter, I did not know (and had no means of knowing) or hear of Mr. Bell's experiments in reaping by horse-power, the next and only remaining question is, *what* Reaping Machine did Mr. Bell really invent, and what resemblance is there between his machine and mine,—whether Bell's was "*the* Reaping Machine," instead of, as stated by you, "McCormick's Reaper that gained a triumph at the World's Fair?" If so, as you have properly remarked, that "this useful invention" should have been permitted to enjoy the Rip Yan Winkle sleep in the hands of its inventor, until brought forward at the Great Exhibition of all nations, by an American, "Englishmen and Scotchmen *ought* to take shame to themselves!" But not quite so; for although, in a trial made on the farm of Mr. Watson (of Scotland, interested with Mr. Bell), in the last harvest with Hussey's machine, as made and exhibited by Mr. Croskill, the premium was awarded to Mr. Bell, it remains, yet to be demonstrated that his is practically a useful operating machine at all, —a mere trial, made under favorable circumstances, being not a sufficient test of that fact, as any one acquainted with reaping by machinery must be aware of. Indeed, upon this point, the fact that Bell's machine has, for more than twenty years, been used in the hands of the inventor (or his brother, as is said) alone, and was not, at the end of that period, deemed by himself worthy of an exhibition at the World's Fair, so near his own door—would seem conclusive.

Finally, in short, the leading difference in the principles of Mr. Bell's machine, and mine are, first, Bell's *cuts* with a series of shears (some 14 inches in length!) which, to operate, require all the accuracy and exactness of fit, in the cutting edges, of shears used for other purposes, as is generally understood, and which is not attainable in a Reaping Machine. In my machine the cutting is done by the simplest, as well as most effective and durable of all cutting edges for *reaping*—the *sickle*. In Mr. Bell's machine, the grain is gathered by a reel on a moving apron, or canvas, designed to discharge it regularly in *swath*, and which, it is not pretended, will answer the purpose at all in lodged grain. In mine, the grain is gathered by a reel on an immovable platform, where it is collected into *sheaves*, and then deposited at the side of the machine by a man, with a rake, riding upon it. Bell's machine is propelled before the horses, while mine is drawn behind them. Thus it will be seen that my Reaper, in its plan and principles of operation, is essentially and entirely different from that of Mr. Bell of Scotland.

By giving the foregoing a place in your journal, you will, I trust, be doing no more than by your readers, will be considered due to the subject, whilst you will oblige, very respectfully,

C. H. MCCORMICK.

New York, Nov. 4, 1852.

Recent Foreign Inventions.

ANTHRACITE COAL FOR GLASS.—A patent has recently been taken out in London by James Timmins Chance, of Handsworth, glass manufacturer, for the employment of anthracite coal in the manufacture of glass. The application of anthracite coal for the manufacture of glass, is spoken of on page 817 of Galloway and Hebert's "History of the Steam Engine," in speaking of Howell's Furnace.

IMPROVEMENT IN MAKING CANDLES.—Wm. E. Cooper, of Mottram, Chester; England, patentee.—One improvement consists in making candle wicks with one-third, or thereabouts, of the strands, saturated with a solution of bismuth, in oil, or with any other solution by which the burning properties of the same are increased; the object being to cause the wick thus prepared to turn out of the flame when being burnt, and so to obviate the necessity for snuffing.

Another improvement consists in forming the rod or stick on which the wicks of dipt candles are placed for dipping, of a triangular form, and with grooves on one side for keeping the wicks at their proper distances apart.

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TO CORRESPONDENTS.

J. P. C., of N. Y.—The same plan of propulsion by pistons, forced into a water chamber against the water at the stern of a vessel, has been proposed to us before, but it is not new; it is illustrated in the London Mechanics' Magazine for 1845.

L. A S., of Pa.—We fully concur in your arrangement with the Commissioner.

S. C., of N. Y.—We think your model illustrates a new invention, as far as the securing the spokes to the hub is concerned, but the application of the invention to railroad purposes, or the using of double axles upon railroad trucks, is impracticable as you have them arranged.

H. S. W., of Miss.—It is quite true, as you say, respecting the pressure of the atmosphere on the cannon or musket; this amounts to 15 lbs. on the square inch, and acts upon the gun by crushing force in proportion to the size of the cannon and the smallness of aperture behind the shot; cannons and fire-arms are made strong to resist the whole expansive and contractive forces. It would never do to lose time on a field of battle, to extract the air by a pump; the time required is a great deal. We have known of a fowling piece made with a large vacuum chamber attached, for still shooting, in order to prevent noise by the discharge.

G. C., Jr., of Mass.—You can obtain a pamphlet of Geo. Carvill, 86 Cedar st., edited by Sereno Newton, which will instruct you in regard to setting out gear. Price, we think, is 50 cents.

J. M. M., of Mich.- A locomotive, with its tender loaded, all weighing no more than 20 tons, can be built to work up to 60 horse power. Ask the locomotive machinist of any railroad and he will tell you this can be done. You know that steam plows have been used; and you are no doubt able to judge of its economy; if it would be profitable to you we advise you to go on.

D. B. C., of N. Y.—We have not seen such an instrument exactly, although there is a vertical plummet, with an index and pointer, illustrated in Vol. 1, Sci. Am. The spirit level is not attached. You have not fully explained its use, application, and the necessity for the sector teeth.

L. & S., of Va.—We inform you, on the authority of Lieut. Maury, that the Trade Winds cannot be accounted for by the earth's rotation. Without the earth's rotation we assuredly would not have trade winds; and without it we would not have dew on the grass, but the dew is not caused by the earth's rotation.

P. O., of Me.—You are mistaken in regard to the cause of the pain experienced by persons who ascend in balloons. The air of the upper regions is more rarefied than that on the earth; and the air inside their bodies (seeking to become of the same rarity) bursts through their eyes and ears, producing intense pain.

C. R., of Pa.—Oxygen gas supports combustion. Blowing lighted tinder carries oxygen to it and quickens it, in the same way as a pair of bellows quickens a dull fire.

H. A., of Mass.—Your inquiries concerning Ray's Prizes are fully answered on another page.

D. C. T., of N. Y.—The specification and one drawing of your Alarm were sent you on the 8th inst.

W. F., of Tenn.—We shall give your order immediate attention. $500 received,

A. R., of Miss.—We have carefully examined the sketches of your Lathe and find nothing new. Lathes are made in this city embracing all of your improvements.

L. A. H., of Va.—Ericsson's Caloric Engines are not as yet fully tested, and it will be several months before a satisfactory answer can be given to your inquiries. Like all other untried inventions, it is uncertain what its practical value may be.

J. N. F., of Va.—The engine recently advertised by us has been disposed of.

S. T., of N. Y.—We cannot give you a decision in regard to the point of infringement; we are not in the habit of giving opinions in this respect.

S. F. W., of Miss.—The first steamboat that was ever used, was launched on the Hudson in 1807.

R. M. B., of Ga.—The number of miles of railroad in the United States is over 12,000, costing $300,000,000.

C. T.. of Me.—We have never seen the description of the machine you mention.

A. Y. N., of S. C.—Lord Rosse's Telescope is fixed in a building, on his estate in Ireland, but it is not the largest, being excelled by Mr. Craig's, near London.

W. N., of Ala.—The best plate glass is imported from France.

A. V. N., of Mass.—Chipping is always done by hand; we are aware that there is a machine for chipping off roughly, used at a factory on the East River, but for fine work it is inapplicable.

A. W., of Texas—Mercury is found in several parts of the globe.

Money received on account of Patent Office business for the week ending Saturday, Nov. 6:—

J. E., of R. I., $15; O. L. R., of N. H., $51; C. F. B., of R. I., $30; A. A. D., of Geo., $40; A. J. W., of N. Y., $50; J. E. A., of Ct, $30; H. & B., of O., $20; M. H. C., of Pa., $20, S. & B., of L. I., $55; W. D. W., of N. C., $30; G. S., of L. I., $62.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, Nov. 6:

J. E., of R. I.; O. L. R., of N. H.; R. S., of N. Y.; H. &, B., of O.; A. J. W., of N. Y.; G. S., of L. I.; M. C., of Pa.

A Chapter of Suggestions, &c.

CHEAP POSTAGE.—The postage on the Scientific American, to subscribers residing within the State of New York, will be but 13 cts. per annum henceforth, instead of 13 cents per quarter as formerly, and will be delivered at the most remote parts of the United States for 26 cts. per annum, whereas the postage formerly demanded at distant offices was $1,20 per annum. The saving produced by the reduction of newspaper postage under the new statute, is no inconsiderable item, and many who could not afford to subscribe for the Scientific American, under the old law, can now withstand the expense.

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BACK NUMBERS AND VOLUMES—In reply to many interrogatories as to what back numbers and volumes of the Scientific American can be furnished, we make the following statement:—Of Volumes 1, 2 and 3—none. Of Volume 4, about 20 Nos., price 50 cts. Of Volume 5, all but four numbers, price, in sheets, $1. Of Volume 6, all; price in sheets, $2; bound, $2,75 Of Vol. 7, all; price in sheets, $2; bound, $2,75.

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PATENT LAWS, AND GUIDE TO INVENTORS.—We publish, and have for sale, the Patent Laws of the United States. The pamphlet contains not only the laws but all information touching the rules and regulation of the Patent Office. Price 12 1-2 cts. per copy.

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PATENTEES—Remember we are always willing to execute and publish engravings of your inventions, provided they are on interesting subjects, and have never appeared in any other publication. No engravings are inserted in our columns that have appeared in any other journal in this country, and we must be permitted to have the engraving executed to suit our own columns in size and style. Barely the expense of the engraving is charged by us, and the wood-cuts may be claimed by the inventor, and subsequently used to advantage in other journals.

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American and Foreign Patent Agency

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Having Agents located in the chief cities of Europe, our facilities for obtaining Foreign Patents are unequalled. This branch of our business receives the especial attention of one of the members of the firm, who is prepared to advise with inventors and manufacturers at all times, relating to Foreign Patents.

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MACHINISTS' & MANUFACTURERS' Tools. O. SNOW & CO., Union Works, Meriden, Ct. Having increased their facilities for manufacturing Lathes, Planers, &c., have now on hand, finished and finishing off, Slide Lathes, a variety of sizes and lengths, at prices varying from $125 to $800, according to size and finish; also Hand and Power Planers for iron, 2, 3 1-2, 6, and 10 feet beds; also Milling Machines, Hand Lathes with or without iron beds, comprising six different sizes, all of the most approved construction and warranted of the best quality of work. 9 7*

PALMETTO IRON WORKS FOR SALE—The proprietors being desirous to close their business, offer for sale their Establishment, with the entire stock of Tools, Patterns, and Materials. A fine opportunity is now offered to capitalists and others interested, to secure an admirable business stand. Apply at the Iron Works, Pinckney street, or by letter to WM. S. HENEREY, Charleston, S C. 9 4*

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For machines or territorial rights, apply to C B. HUTCHINSON & CO., Syracuse, N. Y. 9tf

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WILLMER & ROGERS, 42 Nassau street, New York, are agents for America for the following London Periodicals:—London Mechanics' Magazine; Builder; Practical Mechanics' Journal; Artizan; London Architect and Civil Engineer; Philosophical Magazine; London Repertory of Inventions; Newton's Journal of Arts; London Mining Journal; Magazine of Science, &c. &c. Orders for any Newspaper, Periodical, or Book, published in Europe, promptly executed on the lowest terms. All letters answered by return mail. WILLMER & ROGERS. 8 2*

IMPORTANT TO IRON FOUNDRIES—The Galvanic Alloy Manufacturing Co., Nos. 401, 403, and 405 Cherry st., N. Y., will furnish the Aerostatic Fan Blower at $55, and with patent fitting at $65, that produce sufficient blast for the largest cupola, melting 3 and 4 tons of iron per hour; taking less than one half the power of those now in use, that cost from $80 to $100. The wings, being only about an inch in width (planned upon entirely new and mathematical principles), produce double the blast with half the power of other blowers. Warranted in all cases, or they may be returned and the money refunded. 38 eowtf.

1852 TO 1856.----WOODWORTH'S PAtent Planing, Tongueing, Grooving, Rabeting, and Moulding Machines.—Ninety-nine hundredths of all the planed lumber used in our large cities and towns continues to be dressed with Woodworth's Patent Machines. Price from $150 to $760. For rights in the unoccupied towns and counties of New York and Northern Pennsylvania, apply to JOHN GIBSON, Planing Mills, Albany, N. Y. 1amtf

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THE TROY IRON BRIDGE CO. are prepared to erect Iron Bridges or Roofs, or any kind of bearing trusses, girders, or beams, to span one thousand feet or under, of any required strength, in any part of the country. Their bridges will be subjected to severe tests, and can be built for about the price of good wooden ones. Address BLANCHARD & TELOUR, Troy, N. Y. 7 20

SLAUGHTER & PERRY'S IMPROVED CORDAGE MACHINE—The Patent Right to this valuable machine, for New York, the New England and Southern States, are for sale. Machines in operation can be seen at Todd, MacLay & Co.'s, Paterson, N. J.; Clark's Mills, Oneida Co., N. Y., W. A. Richardson's, Louisville, Ky., and at the subscribers' in Fredericksburg, Va. Address F. & J. W. SLAUGHTER. 7 5*

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BAILEY'S SELF-CENTERING LATHE—The best in America for Chair Stuff, Wagon Thills, Rake, Fork, Hoe, and Broom Handles. Persons wishing this Lathe, warranted to do twice the work of any other lathe, by applying to L. A. SPALDING, Lockport, N. Y., can be supplied. The following certificate of Birge & Brother, extensive chair manufacturers, at Troy, N. Y., is to the point:—

"After making a perfect and thorough trial of Bailey's Self-Centering and Self-Adjusting Lathe, we can cheerfully recommend it as in every way calculated to perform its work in the best manner—as it is the best Lathe we have ever used in our manufactory; and having used many different kinds, we feel safe in asserting that it is probably the best machine of the kind in use. BIRGE & BROTHER. Francis Miller, Lucius Foot, Turners for B. & B." 3 3m

BALLOONS—Of any size made to order, warranted; also Wise's complete work on Aeronautics; price $2, sent postage free to any part of the United States. A 25 feet Balloon on hand. Orders punctually attended to. Address JOHN WISE, Aeronaut, Lancaster, Pa. 6 6*

BEARDSLEE'S PATENT PLANING MAchine, for Planing, Tonguing and Grooving Boards and Plank.—This recently patented machine is now in successful operation at the Machine shop and Foundry of Messrs. F. & T. Townsend, Albany N. Y.; where it can be seen. It produces work superior to any mode of planing before known. The number of plank or boards fed into it is the only limit to the amount it will plane. For rights to this machine apply to the patentee at the abovenamed foundry—or at his residence No. 764 Broadway; Albany. GEO. W. BEARDSLEE. 23tf

MACHINERY.—S. C. HILLS, No. 12 Platt-st. N. Y. dealer in Steam Engines, Boilers, Iron Planers, Lathes, Universal Chucks, Drills; Kase's, Von Schmidt's and other Pumps; Johnson's Shingle Machines; Woodworth's, Daniel's and Law's Planing machines; Dick's Presses, Punches and Shears; Morticing and Tennoning machines; Belting; machinery oil, Beal's patent Cob and Corn mills; Burr mill and Grindstones; Lead and Iron Pipe &c. Letters to be noticed must be post-paid. 1tf

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PATENT CAR AXLE LATHE—I am now manufacturing, and have for sale, the above lathes; weight, 5,500 lbs., price $600. I have also for sale my patent engine screw lathe, for turning and chucking tapers, cutting screws and all kinds of common job work, weight 1500 lbs., price $225. The above lathe warranted to give good satisfaction. J. D. WHITE, Hartford, Ct. 39 26*

PAINTS, &c. &c.—American Atomic Drier Graining Colors, Anti-friction Paste, Gold Size, Zinc Drier, and Stove Polish.

QUARTERMAN & SON, 114 John st., 1tf Painters and Chemists.

LATHES FOR BROOM HANDLES, Etc.—We continue to sell Alcott's Concentric Lathe, which is adapted to turning Windsor Chair Legs, Pillars, Rods and Rounds; Hoe Handles, Fork Handles and Broom Handles.

This Lathe is capable of turning under two inches diameter, with only the trouble of changing the dies and pattern to the size required. It will turn smooth over swells or depressions of 3-4 to the inch and work as smoothly as on a straight line—and does excellent work. Sold without frames for the low price of $25—boxed and shipped with directions for setting up. Address (post.paid) MUNN & CO. At this Office.

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IMPORTANT TO SOAP MAKERS—Letters Patent of the United States having been issued to Wm. McCord on the 27th of July, for a valuable improvement in Soap, all manufacturers, venders, and users are hereby cautioned against the use of Kaolin, or other equivalent aluminous minerals combined with ammonia, as they will, by so doing, infringe this patent, and subject themselves to prosecution. All the necessary fixtures for making 2000 lbs. per day, will cost not to exceed $75; two persons only required to attend the manufacture. Rights to manufacture this the most valuable soap, are offered for sale on reasonable terms. Apply to WM. McCORD, 141 Sullivan st., N. Y. 47tf

LOGAN VAIL & CO., No. 9 Gold street, New York, agents for George Vail & Co., Speedwell Iron Works, have constantly on hand Saw Mill and Grist Mill Irons, Press Screws, Bogardus' Horse-Powers, and will take orders of Machinery of any kind, of iron and brass; Portable Saw-mills and Steam Engines, Saw Gummers of approved and cheap kind, &c. Gearing, Shafting, large and small, cast or of wrought iron. 11 1y

NEW HAVEN MANUFACTURING COMpany, Tool Builders, New Haven, Conn., (successors to Scranton & Parshley) have now on hand $25,000 worth of Machinist's Tools, consisting of power planers, to plane from 5 to 12 feet; slide lathes from 6 to 18 feet long; 3 size hand lathes, with or without shears; counter shafts, to fit all sizes and kinds of universal chuck gear cutting engines; drill presses, index plates, bolt cutters, and 3 size slide rests. The Co are also manufacturing steam engines. All of the above tools are of the best quality, and are for sale at 25 per cent. less than any other tools in the market. Cuts and list of prices can be had by addressing as above, post-paid. Warehouse No. 17 Platt st., New York, S. C. HILLS, Agent N. H. Man'g Co. 45tf

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SCIENTIFIC MUSEUM.

Wild Jasmine for Fevers.

Dr. Hickman, in an article in the "Cincinnati Eclectic Medical Journal," describes the uses and value of the Gelseminum Lemperirens (wild jasmine) in cases of fever. He states that he has used it for about a year in a hundred cases of fever without a single failure. To prepare it, the green roots are washed and bruised, and then placed in a clean glass vessel, and good whiskey poured upon them until they are covered, when they are suffered to stand and macerate for ten days, after which they are ready to be strained. About 30 drops of this tincture are given to an adult every three hours until three doses are taken. In all cases of fever he gives from three to six grains of quinine along with this tincture of jasmine. It is always advantageous to use it along with quinine, as it prevents the rush of blood to the head, and is anti-spasmodic. It will relax the nervous system of itself for a short time, but the fever will return again, hence it should always be given with the quinine. This course of treatment, he states, has never failed to break up an attack of remittent fever in from six to ten hours, by first giving some mild cathartic. In bad cases of Typhoid fever, it is necessary to give a cathartic first, which will secrete the bile, and then the jasmine and quinine are given afterwards. It produces great relaxation of the nervous system, with dimness of vision, but he asserts that no deleterious effects follow; it should be given in all cases until the patient becomes drowsy.

Silk Manufacture.

The quantity of silk annually consumed by women and balloons is so great, that it is really astonishing how worms and mulberry trees keep up the supply. According to "The Paris Review" there are, in France, no less than 130,000 looms for silk, of which the products amount in value to three hundred millions per annum. The fabrics of Lyons yield about or nearly two-thirds of that sum—a moiety of the whole is exported—three-fifths of the exports from Lyons; the United States consume the greater part. Competition is formidable abroad, especially in Great Britain and Germany; but it was acknowledged at the Great Exhibition that Lyons retained pre-eminence in designs and tissues. The 70,000 looms of Lyons occupy 175,000 individuals; one half of these are dispersed over a radius of from 20 to 25 leagues; the others are in the bosom of the city. There are three hundred manufacturing firms, embracing from four hundred and fifty to five hundred names. The average earning of the operative is thirty cents per day.

Opium Eating in New York.

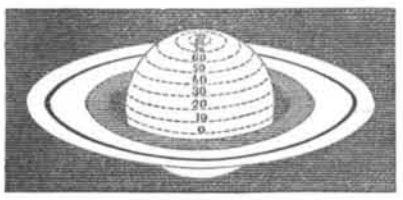
Dr. Schofield, in a letter to the "Daily Times," asserts that 1000 lbs. of opium are sold by retail, weekly, in New York. This amounts to 52,000 lbs. per annum, and does not embrace the quantities that may be purchased wholesale by some of those who daily use it. He states that "its use is fearfully on the increase in this city, and it is constantly receiving recruits from the alcoholic ranks as a cheap means of producing intoxication. Opium inebriation is productive of the greatest evils; it is a fearful species of drunkenness. It drowns care for a while, and is therefore very seductive in its influence, but it bringeth forth tears, disease, and death. It is to be regretted that its use should be on the increase among us; something should at once be done to meet and arrest the evil.

Marquette Lighthouse.

The lighthouse is now ready for inspection by the Superintendent of Lights, and only waits for lamps, oil, and keeper, to render it of service to the mariners of Lake Superior. It is said to be a well-built house, and we hope it will be speedily supplied with its furnishings, and made ready for use.

La Cuscarilla (Peruvian bark), one of the most important products of Bolivia, pays a duty of $10 per quintal to the government for the right of cutting. Notwithstanding this duty, the exportation has been so great, of late years, that the Congress passed a law, some eighteen months ago, which took effect about a year since, prohibiting any further cutting for five years.

The Planet Saturn with the Third Ring as seen through Craig's Great Telescope.



The annexed engraving is a perspective view of the planet Saturn, with its third ring, as seen through the great telescope of Mr. Craig, at Wandsworth Common, London. In 1838, Dr. Galle, of Berlin, had noticed a gradual shaking of the inner ring of Saturn towards the body of the planet, and had published an account of his observations in the Transactions of the Berlin Academy. This memoir was so little known, that Prof. Bond of Cambridge, Mass., discovered this third ring in 1850, and published an account of the same. The Rev. Mr. Dawes, of Wateringbury, in November 1850, also succeeded in making out some additional facts about this new appendage. The London Illustrated News states that Prof. Challis, of Cambridge, England, failed to discover this third ring with the telescope of that university, and an observation made with the great reflector of Lord Rosse was equally fruitless. The new telescope of Mr. Craig, when turned upon Saturn resolved the third or interior ring, so as to leave no doubt, upon the subject; in color, it is a brilliant slate.

Saturn is one of the most interesting of the heavenly bodies, owing to the rings by which it is surrounded. Galileo was the first to notice some strange phenomena connected with Saturn, but Huyghens, the German philosopher, was the first to discover the ring which was announced by him in 1656. Dominic Cassini, an astronomer at Paris discovered a second ring in 1675, and now Prof. Bond truly may be said to have discovered the third ring, that darker colored one seen in the inside of two luminous ones in the engraving. The rings of Saturn are broad and flat, and situated precisely in the plane of the planet's equator. Dark divisions have also been discovered in the outer or exterior ring of Saturn, but the dark interior ring for some time will excite great attention in the astronomical world. The thickness of the rings does not exceed 100 miles, according to the estimate of Sir John Herschel, and Prof. Bond, it is said, believes that the substance of the dark ring is aqueous.

The question may be asked, "of what substance are the rings of Saturn composed." A strict soldier of the nebular hypothesis should stick to his theory and arms by asserting that the planet and rings were once in a fluid state, and the planet cooled, contracted, and shrunk from the rings. The inner ring at least is, in all likelihood, aqueous, and it is probable that if we could view our own globe from the moon, we would perceive that it also has a ring, and perhaps rings This is the opinion of Lieut. Maury. He says "the belt of equatorial calms and rains encircles the earth. Were the clouds which overhang this belt luminous, and could they be seen by an observer from one of the planets, they would present to him an appearance not unlike the rings of Saturn do to us."

Mr. Fishbough, the materialist philosopher of Williamsburgh, N. Y., with a remarkable absence of correct knowledge and reasoning, adduces what he considers "a new argument in proof of the nebular hypothesis, which has escaped the notice of astronomers," and takes for his proof and example the planet Saturn. With a prodigious amount of undefined talk respecting centripetal and centrifugal forces, he proves the nebular theory by the bulged form of this planet's equator. How this proves the nebular theory we cannot divine. Although the equatorial is greater than the polar diameter of Saturn, there is no solid equatorial ring, the poles are only flattened, and if this has been produced by the great centrifugal force caused by the rapid rotation of the planet, how can we account for such an amount of flattening at the poles of Saturn in comparison with that of Jupiter, which revolves much faster on its axis than Saturn, in proportion to its bulk. Jupiter is 92,130 miles in equatorial diameter, and 85,430 miles in polar diameter, a difference of 6,700 miles. Saturn's equatorial diameter is 77,230 miles, and polar diameter is 69,300, a difference of 7,930. Saturn rotates on its axis in 10 h. 16·04 s. Jupiter rotates on its axis in 9 h., 55 m., 29·9 s. It revolves faster on its axis than Saturn; it is 14,900 miles greater in equatorial diameter than Saturn, and yet it is not so flattened in polar diameter in proportion to its bulk. The centrifugal force which this materialist philosopher talks about as generated by rotation cannot account for this difference between Jupiter's and Saturn's form. Jupiter, owing to its great bulk and velocity, should present a greater difference between its equatorial and polar diameter than Saturn, but the very reverse is the fact.

Saturn appears to be a perfect ellipse; it was long supposed to resemble a parallelogram, with the four corners rounded off, so as to leave the equatorial and polar regions flatter than they would be in a perfect sphere.—This opinion was first advanced by Sir Wm. Herschel, but Prof. Bessel, in 1833, gave results by actual micrometric measures, which prove it to be an ellipse. The axis of Saturn is inclined to his orbit 63° 10′, or 61° 50′ to the plane of the ecliptic, and it has therefore a considerable diversity of seasons, and it has, according to Sir William Herschel, a very dense atmosphere. The color of this planet's surface, is a yellowish white. It is attended by eight satellites; it revolves round the sun in 29½ years; its distance from the sun is 909,028,000 miles, but its orbit is very eccentric, and it is sometimes nearer the sun by 102,000,000 miles.

The most ancient observation of Saturn was made by the Chaldeans 228 B. C. Since then astronomy has completely changed its character, and made such advances as to be considered the most perfect science. We are indebted to the invention of the telescope for our modern discoveries, and we are not at the end of such improvements yet. It is hoped that the great Craig telescope will be the means of settling the dubious point whether Saturn's outer luminous ring is divided into several narrow ones.

Adulteration of Beer with Strychnine.

Graham and Hoffman at the instance of a prominent English brewer, Mr. Alsopp, and in consequence of reports, originating in Paris, that English ale and beer occasionally derived its bitterness from strychnine, have carefully tested various specimens of these beverages, but without discovering a trace of the poisonous alkaloid. Strychnine when present in no greater quantity than 1-1000 of a grain may be detected by the following process:—The suspected powder is to be moistened with a drop of undiluted sulphuric acid, and a few fragments of bichromate of potash added. An intense beautiful violet color immediately appears at the points of contact which quickly spreads through the whole fluid, and after a few minutes again vanishes The presence of small quantities of organic matter prevents this reaction; in testing beer the authors adopted the following process:—Halt a gallon of beer to which one-half a grain of strychnine had been added was shaken with two ounces of animal charcoal, and the fluid allowed to stand over night. The next day the beer was found almost free from bitterness, the strychnine having been precipitated with the coal. The coal was thrown on a filter, washed, boiled with alcohol and the alcoholic filtrate distilled. The residue in the retort was shaken with a few drops of a solution of caustic potash and about an ounce of ether. The etherial solution evaporated on a watch glass gave a mass in which the presence of strychnine was easily detected by the test above given.

Lloyd's.

Dickens, in his "Household Words," gives a full account of this world renowned institution of commerce, with its 296 agents in foreign and colonial ports, its prodigious amount of underwriters, its immense means of furnishing succor to vessels, seamen, and passengers, and its liberal contributions to objects of charity. Lloyd's may be called the great commercial sensorium of the world, which receives vibration from every nerve that trade agitates, or tempests disturb, or hurricanes shock. Lloyd's has 217 underwriters, 1,368 members, 503 subscribers to the merchant's rooms, and an income of £12,000 sterling per annum. Lloyd kept a tavern, called the "Pope's Head," where the Society of Underwriters used to meet, after the great fire of London which burnt them out in Lombard street, where they remained until 1764, when they took up their quarters in the Royal Exchange. Lloyd's agents may be found in every part of the civilized world.

The Chinese.

While the Governor of California is trying to drive the Chinese out of that State, the government of British Guiana offers a bounty of $80 on their importation.

Governor Hunt, of New York, has issued his proclamation, recommending that Thursday, the 25th of November, be observed as a day of prayer and thanksgiving.

LITERARY NOTICES.

THE GERMAN LANGUAGE; ELEMENTARY WORKS.—Messrs. Weik & Wieck, of Philadelphia, have published two excellent elementary works, by F. Ahn, Doctor of Philosophy at the College of Neuss. They afford a new and easy method of learning the German language. The pronunciation is arranged according to Oehlschlager's Pronouncing German Dictionary. We now receive a great number of German exchange papers, which are published in different parts of our country; this language, therefore, is becoming every day of more importance to great numbers of our people. German literature occupies a high position; we therefore heartily recommend these elementary works, which are well printed and philosophically arranged, to all those who desire to study the German language.

The Phrenological and the Water Cure Journals, for November, are filled with sterling matter. The former contains a portrait and description of that celebrated individual, P. T. Barnum, Esq, of Bridgeport, Ct. The article proves, beyond all cavil, that, instead of being a humbug, he has always been the the victim, not, however, to his own disadvantage, because, while others have been shaking the bush, he has been wise enough to catch the bird. Barnum knows how to keep himself before the community. The two journals are published by Messrs Fowlers & Wells, Clinton Hall, N. Y., at $1 each per year.

The "Democratic Review," for November, contains portraits of Gen. Pierce, President elect, and of Louis Napoleon, the latter being somewhat distorted, resembling the Napoleon of the Press (Bennett) more than "his Uncle's Nephew." The Review is an able exponent of the views entertained by the party whose name it bears Published monthly by G. N. Sanders, 170 Broadway, N. Y., at $3 per annum.

The "Tropical Farmer," devoted to agriculture, domestic and rural economy; published monthly by Lewis C. Gaines, at Ocala, Florida. Terms $1 per annum. The number before us is ably edited, and we wish our cotemporary success.

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